US009167892B1

(12) **United States Patent**
Korb

(10) **Patent No.: US 9,167,892 B1**
(45) **Date of Patent: Oct. 27, 2015**

(54) **OFFSET FOLDING LEG ASSEMBLY**

(71) Applicant: **DSA INTERNATIONAL, INC.**, Zeeland, MI (US)

(72) Inventor: **Daniel Korb**, Baden (CH)

(73) Assignee: **DSA International, Inc.**, Zeeland, MI (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/259,500**

(22) Filed: **Apr. 23, 2014**

(51) **Int. Cl.**
A47B 3/00 (2006.01)
A47B 3/08 (2006.01)

(52) **U.S. Cl.**
CPC ***A47B 3/08*** (2013.01)

(58) **Field of Classification Search**
CPC A47B 2003/0821; A47B 2003/0824; A47B 2003/0827; A47B 2003/0815; A47B 2003/0812; A47B 3/08; A47B 3/0815; A47B 3/0812
USPC 108/131, 130, 132, 129; 248/188.1, 248/188.6
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

166,263	A		8/1875	Crawford
519,379	A		5/1894	Chormann
2,697,018	A		12/1954	Zanos
3,419,295	A	*	12/1968	Small 403/92
4,064,815	A		12/1977	Baum
4,383,486	A	*	5/1983	Reineman et al. 108/2
4,494,465	A	*	1/1985	Fick, Jr. 108/131
4,747,569	A	*	5/1988	Hoshino 248/291.1
5,265,969	A	*	11/1993	Chuang 403/94
5,520,474	A	*	5/1996	Liu 403/97
6,044,775	A		4/2000	Lashlee
6,598,544	B2		7/2003	Laws
7,107,915	B2		9/2006	Laws
7,478,602	B2	*	1/2009	Peng 108/131
7,658,388	B1	*	2/2010	Rodriguez et al. 108/131
7,942,101	B2	*	5/2011	Conley 108/129
8,413,593	B2	*	4/2013	Korb 108/115
2010/0175598	A1		7/2010	Ballendat

FOREIGN PATENT DOCUMENTS

DE	202006016469	U1	1/2007
DE	102007033742	B3	12/2009
FR	2146660		2/1973
JP	2004073326		3/2004
WO	03068020	A1	8/2003

* cited by examiner

Primary Examiner — Jose V Chen
(74) *Attorney, Agent, or Firm* — Niro McAndrews, LLC

(57) **ABSTRACT**

Disclosed is an intuitively operable rotation mechanism for a flip top table that includes an offsetting feature that provides aligned table legs when the table is in a use configuration while offsetting the legs when they are in a storage configuration. By offsetting the table legs in storage configuration, the height of the table legs can be more than one half of the length of the table. This feature is of particular importance for folding tables that are positioned at a standing height.

17 Claims, 27 Drawing Sheets

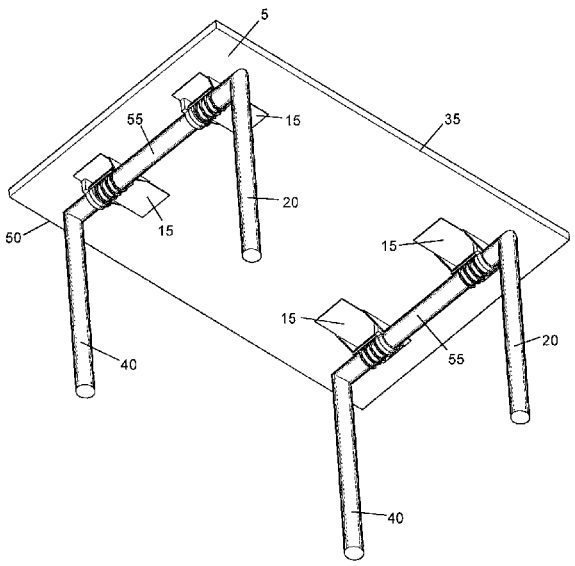


FIG. 1

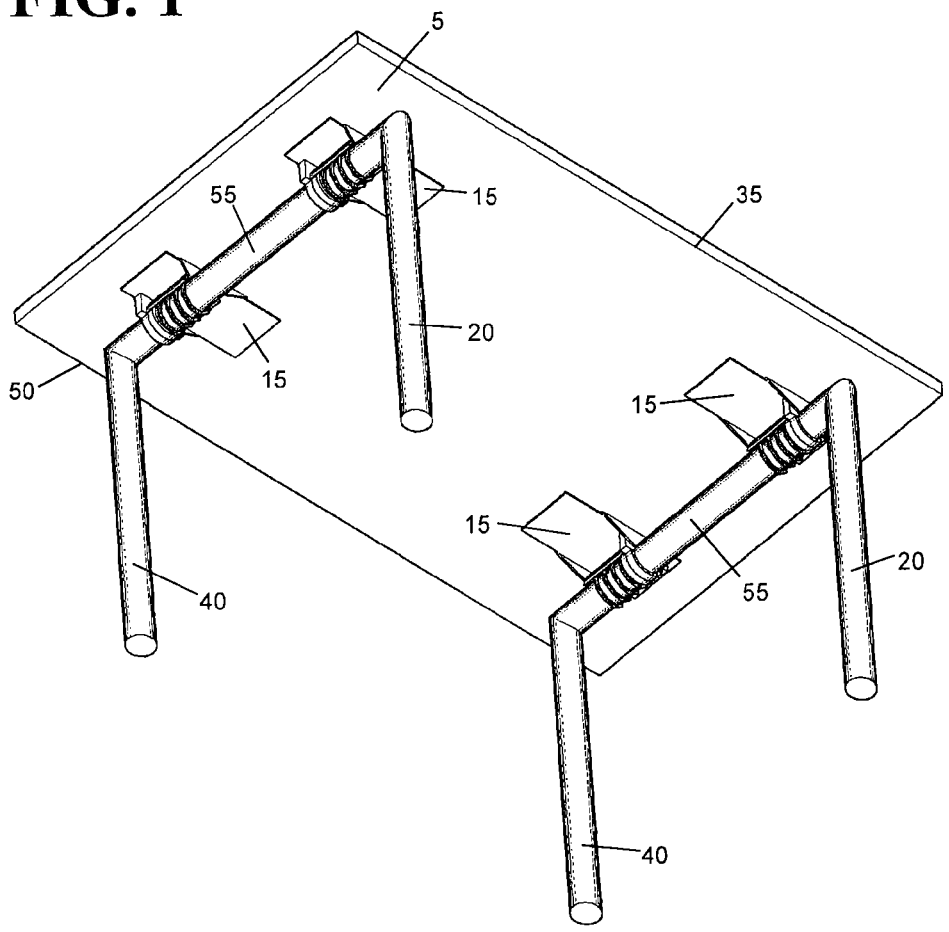


FIG. 2

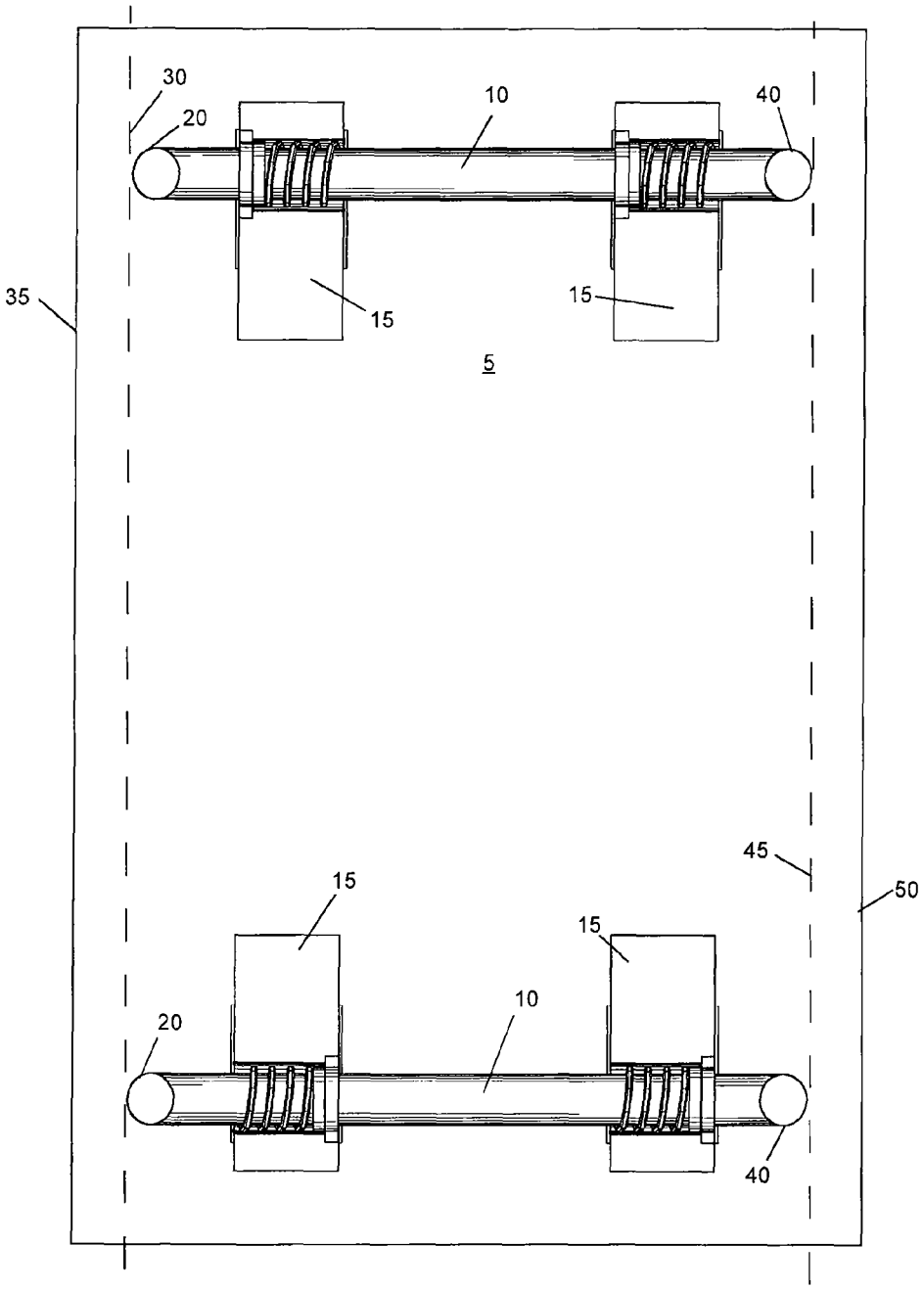


FIG. 3

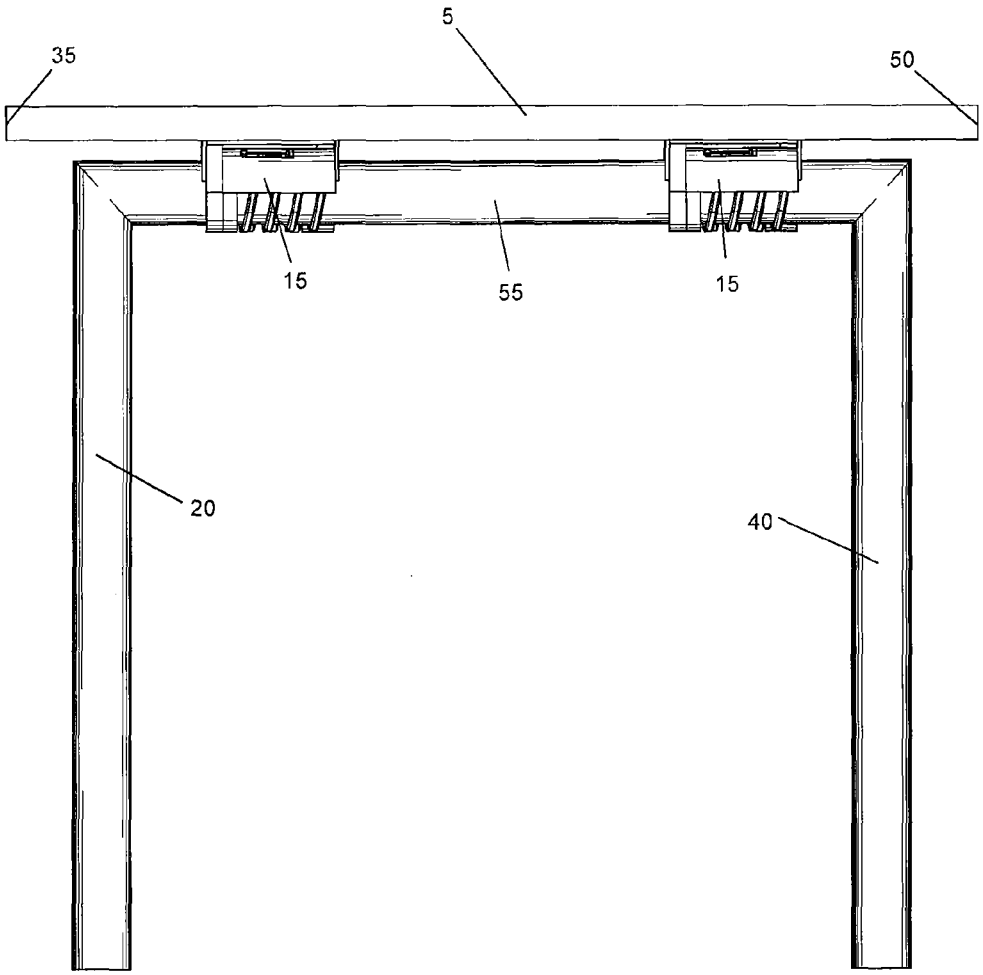


FIG. 4

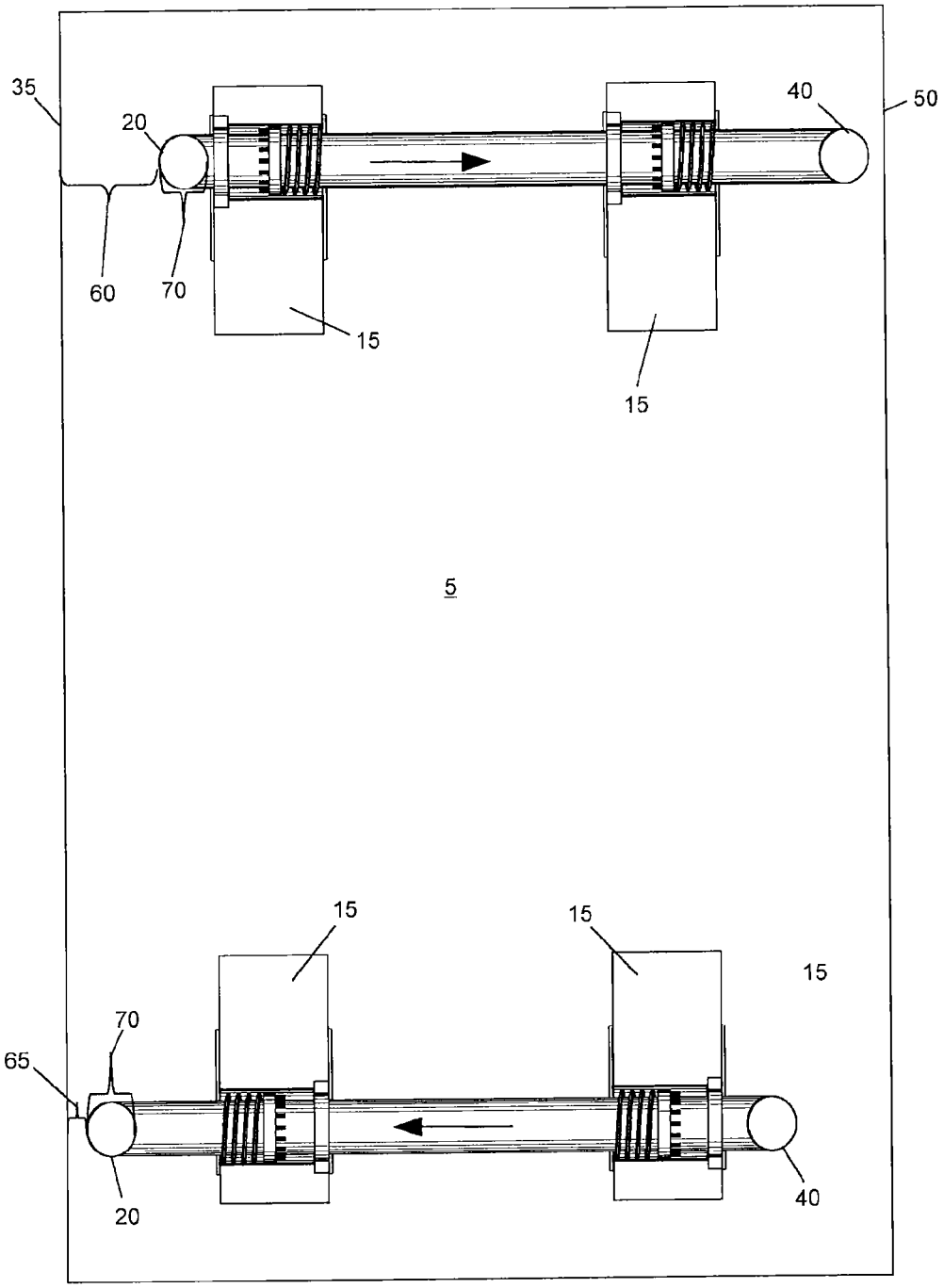


FIG. 5

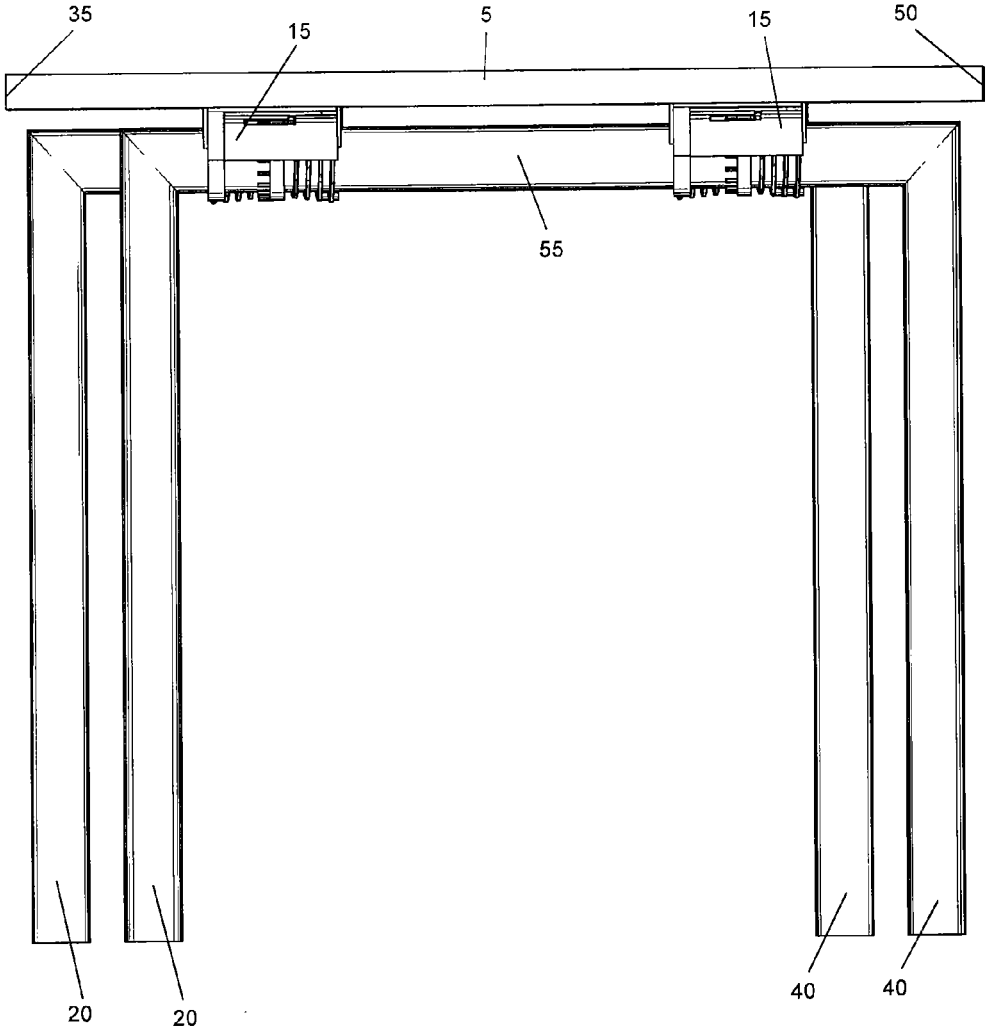


FIG. 6

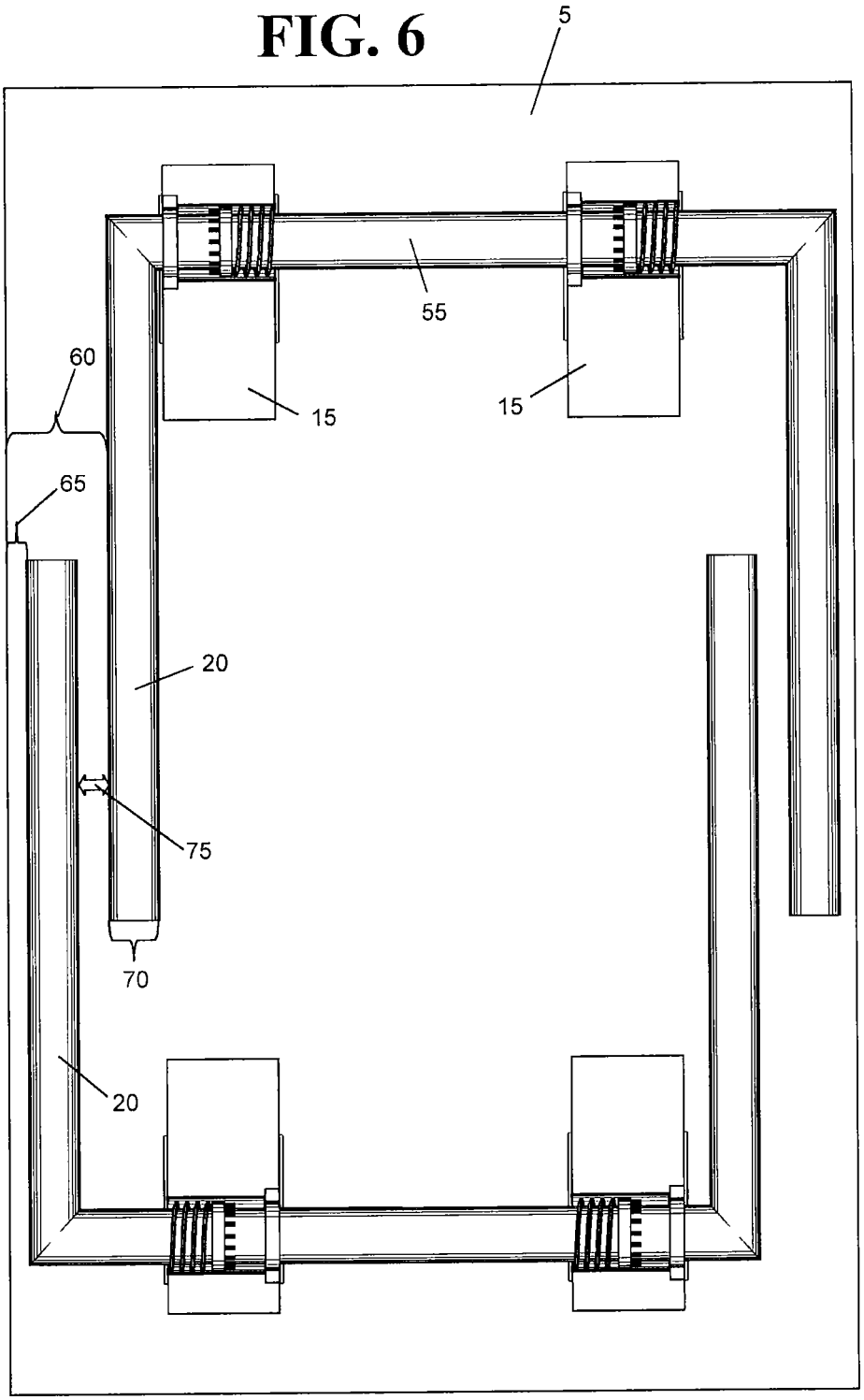


FIG. 7

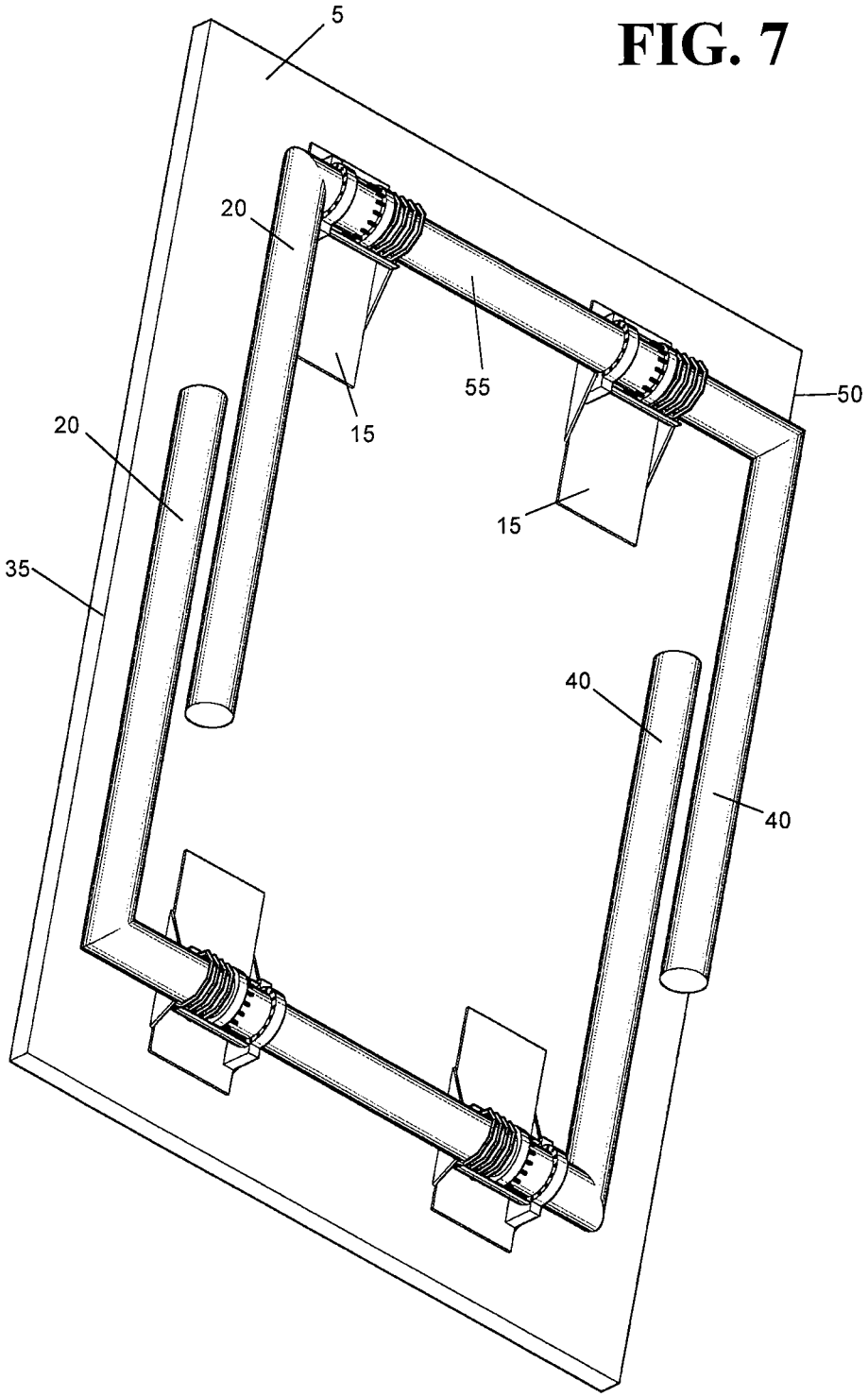


FIG. 8

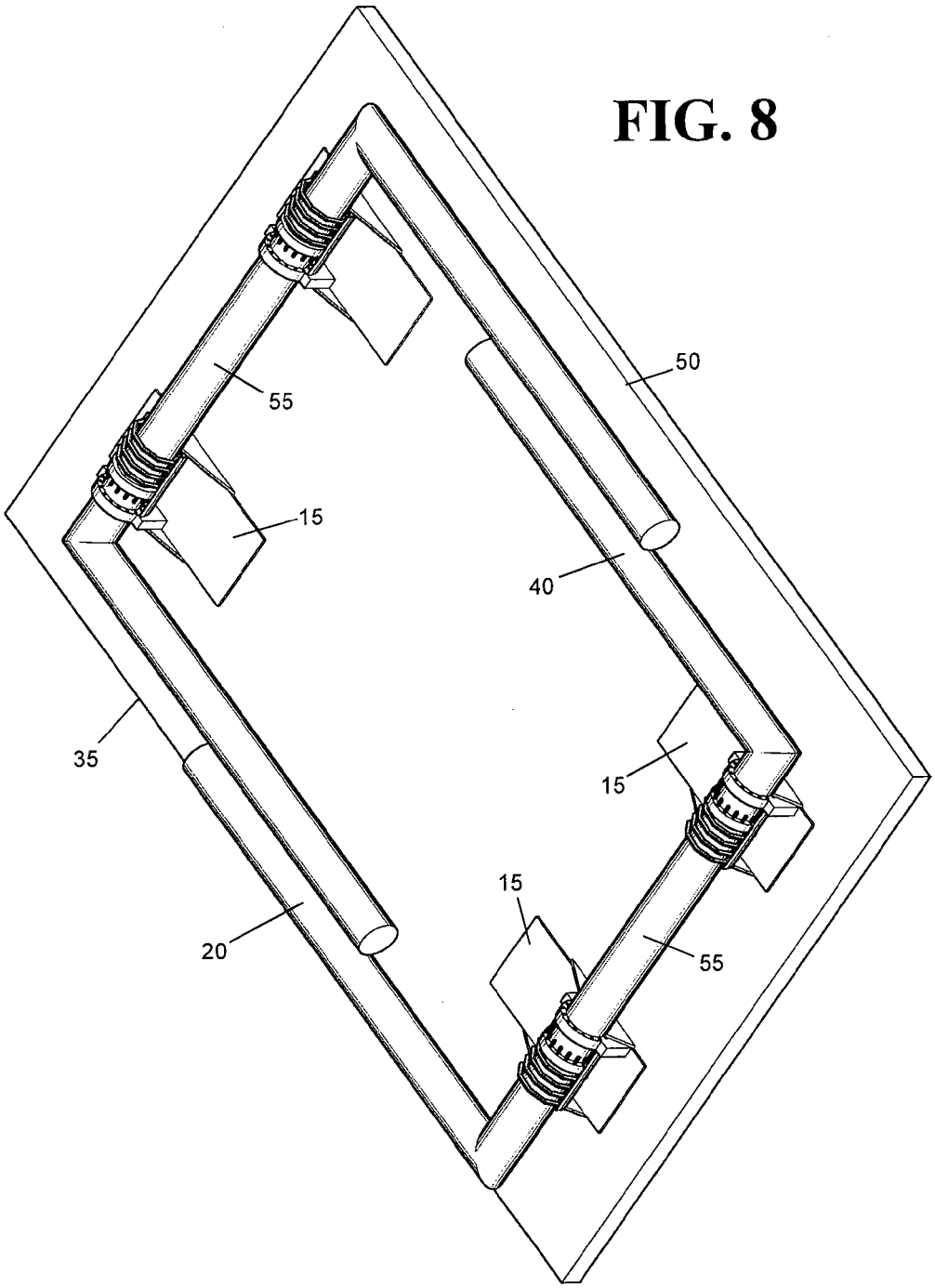


FIG. 9

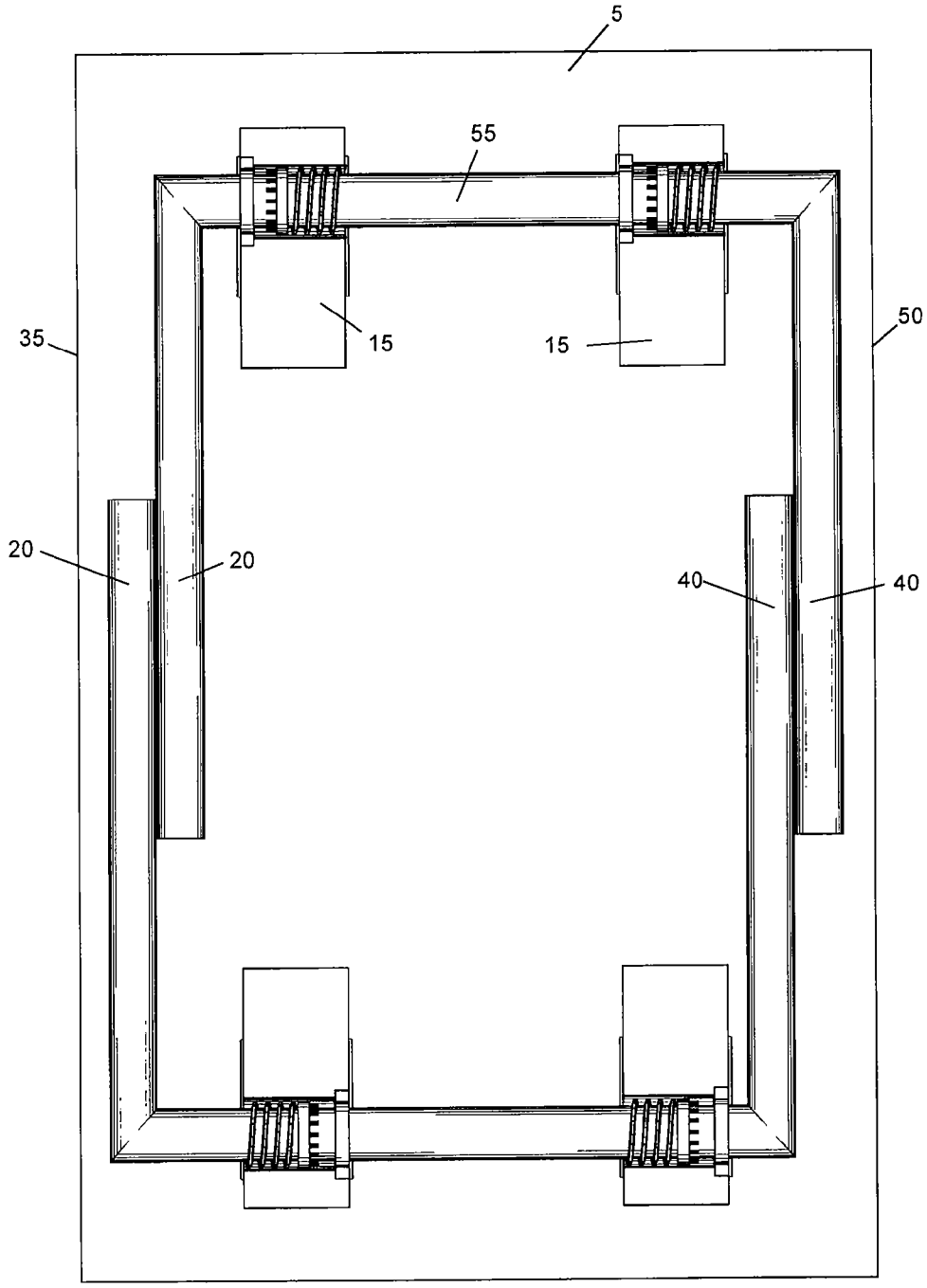


FIG. 10

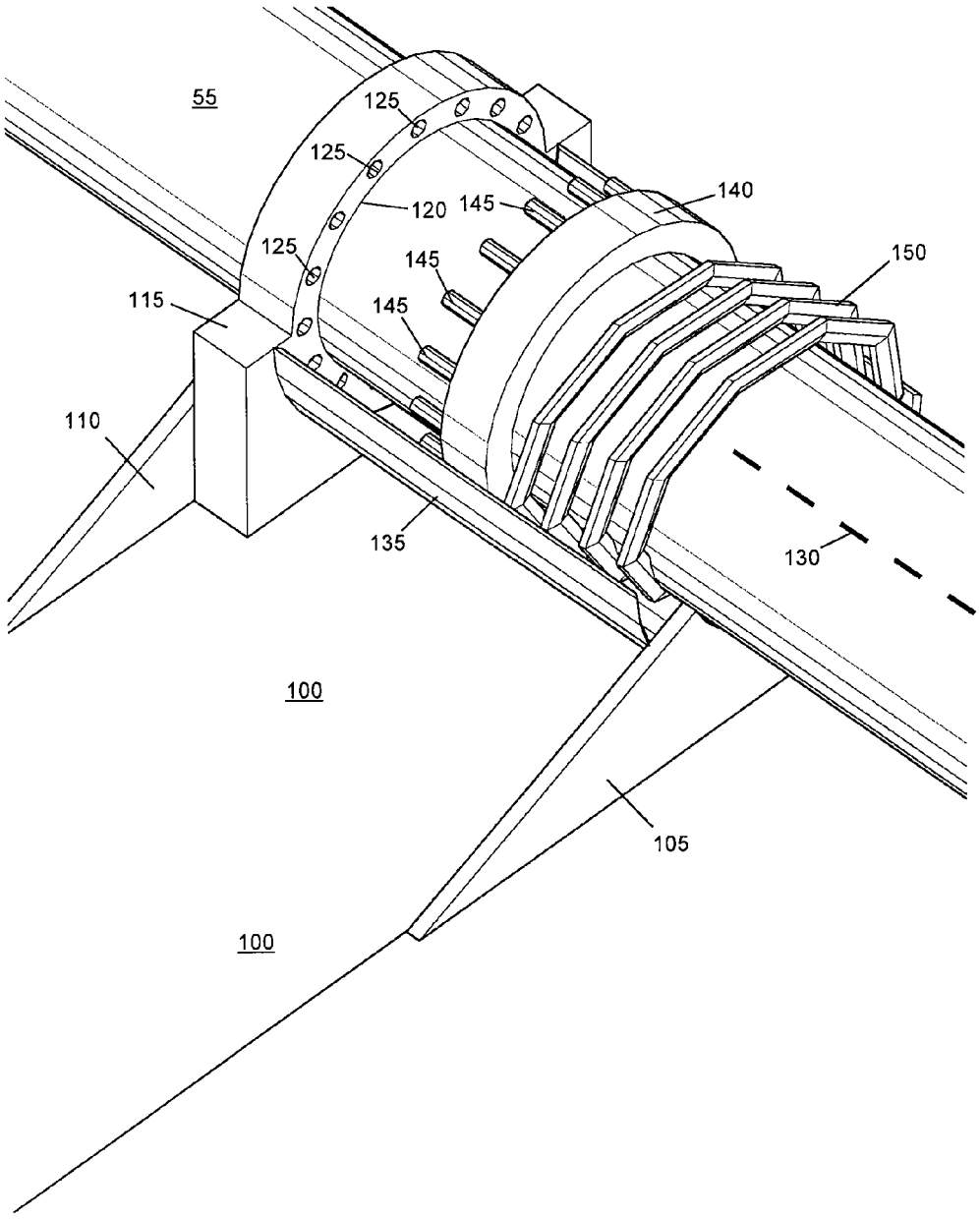

55
125
125
120
145
140
125
145
150
115
145
110
135
130
100
105
100

FIG. 11

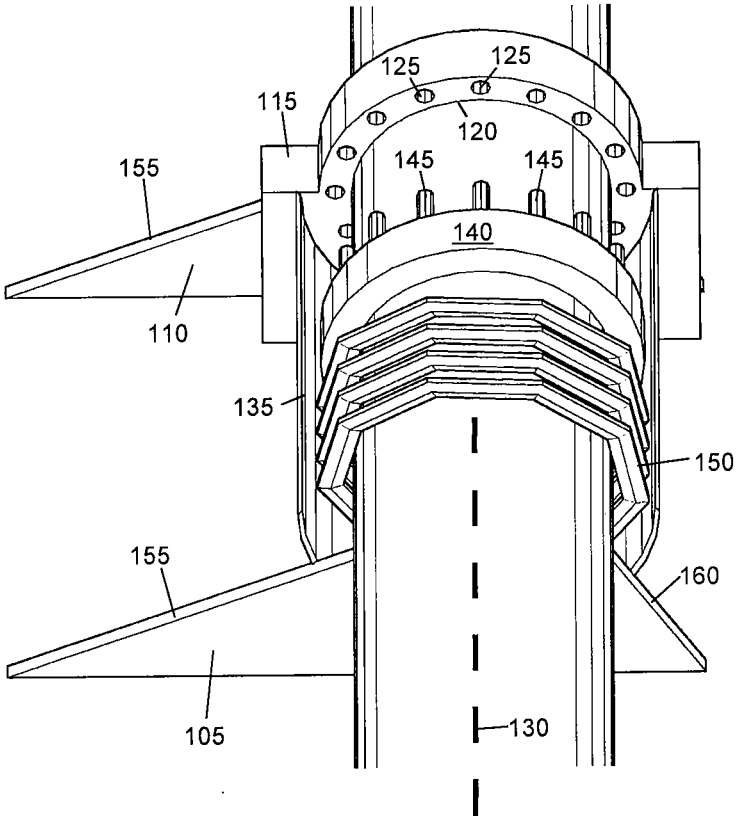


FIG. 12

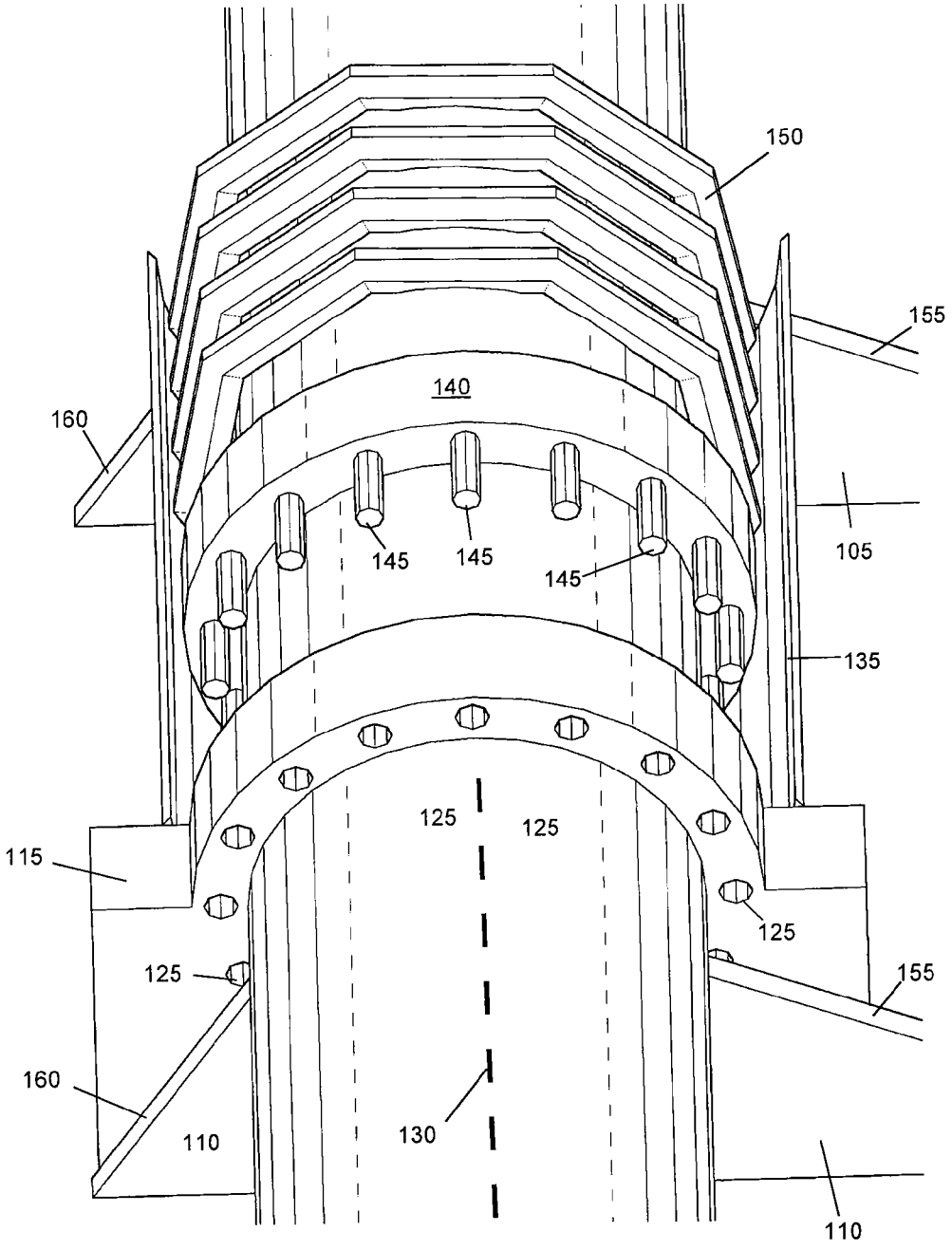

150
155
140
160
145
145
145
105
135
125
125
115
125
125
155
160
130
110
110

FIG. 13

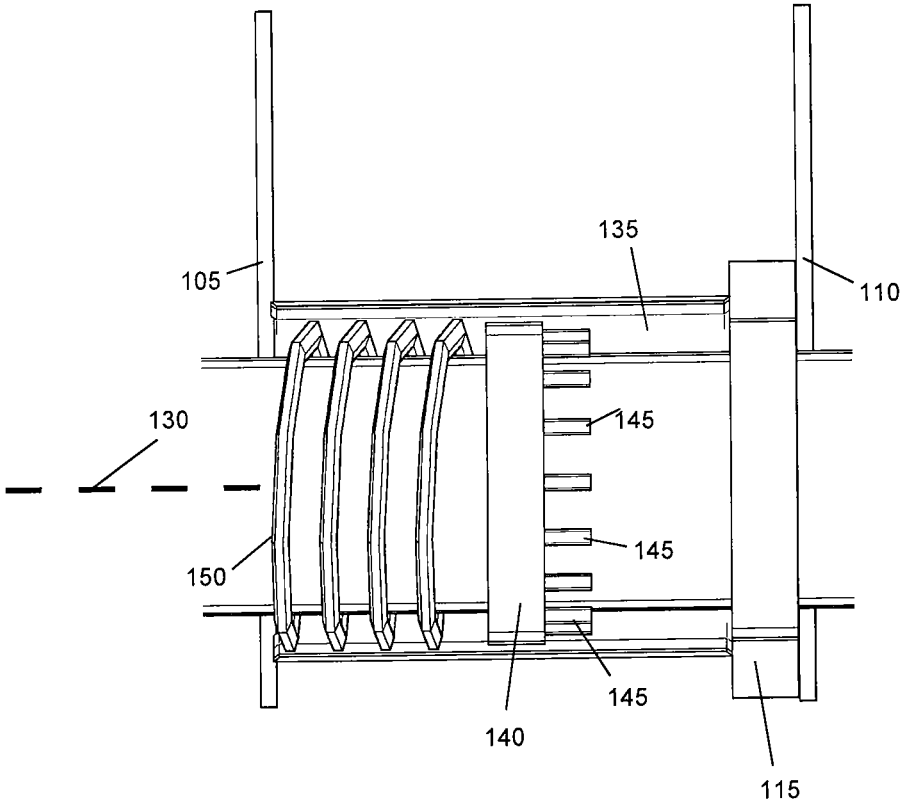


FIG. 14

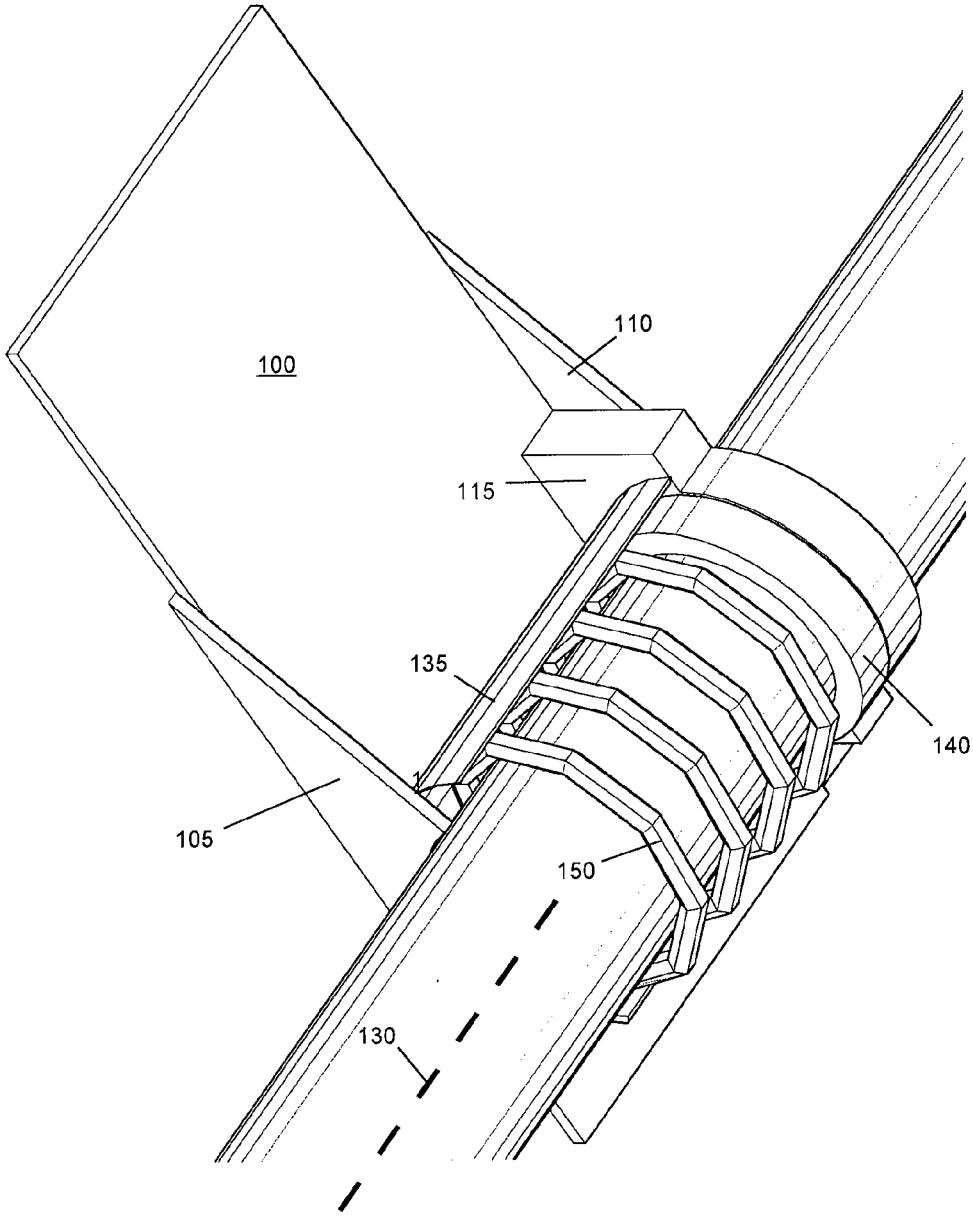
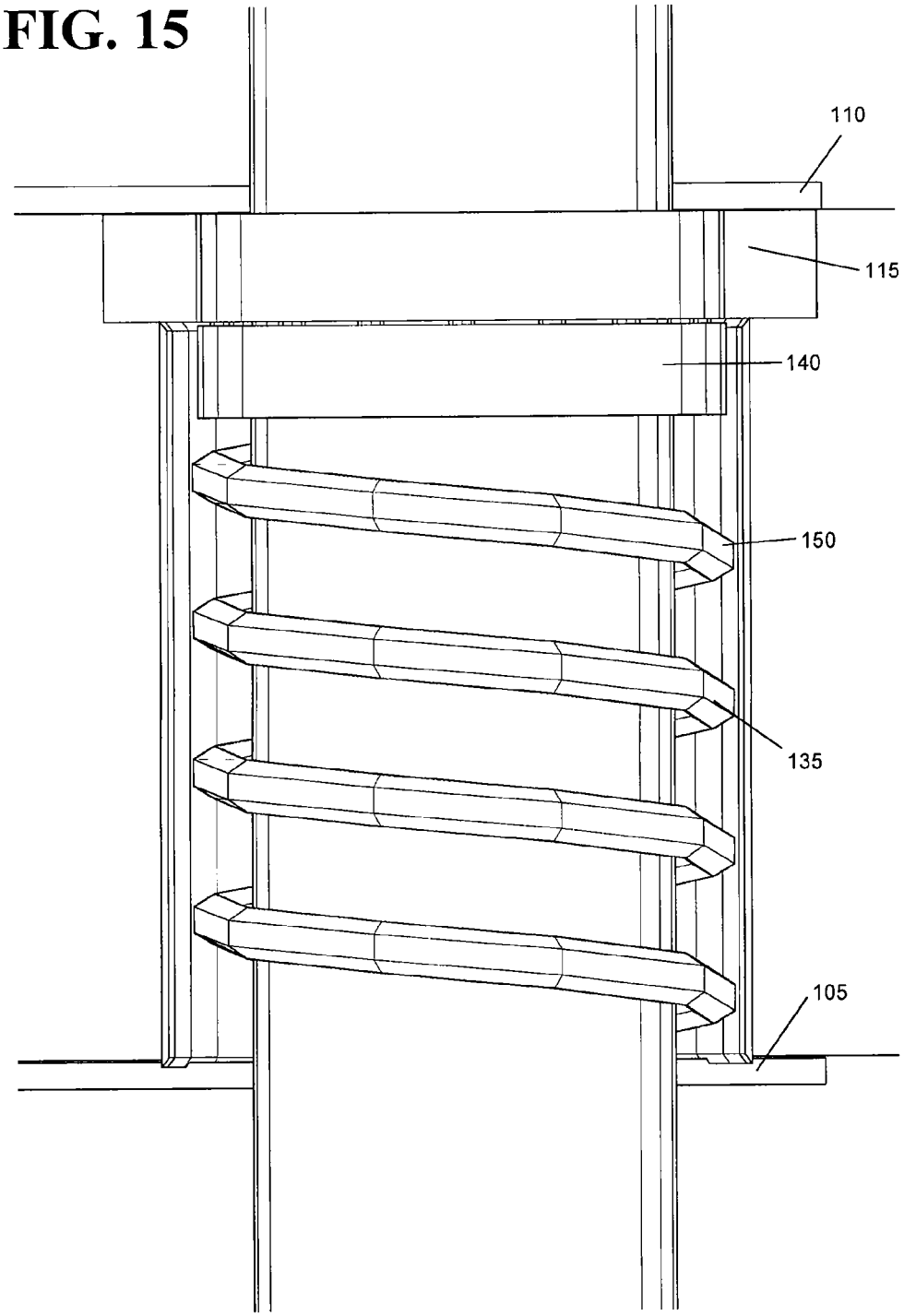


FIG. 15



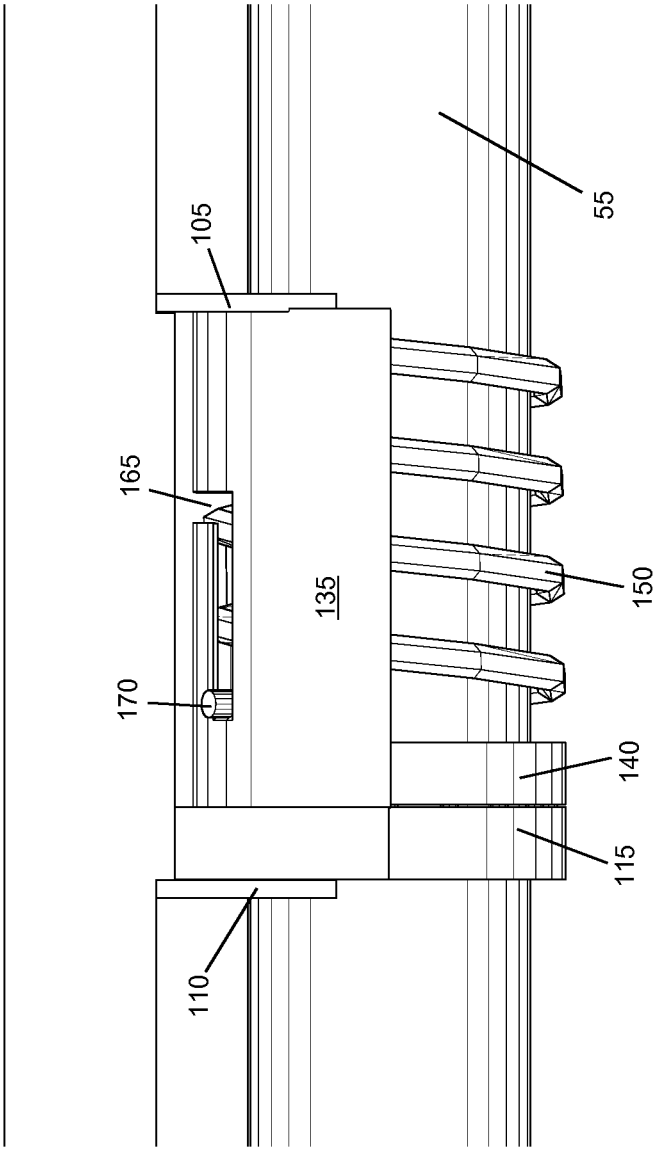


FIG. 16

FIG. 17

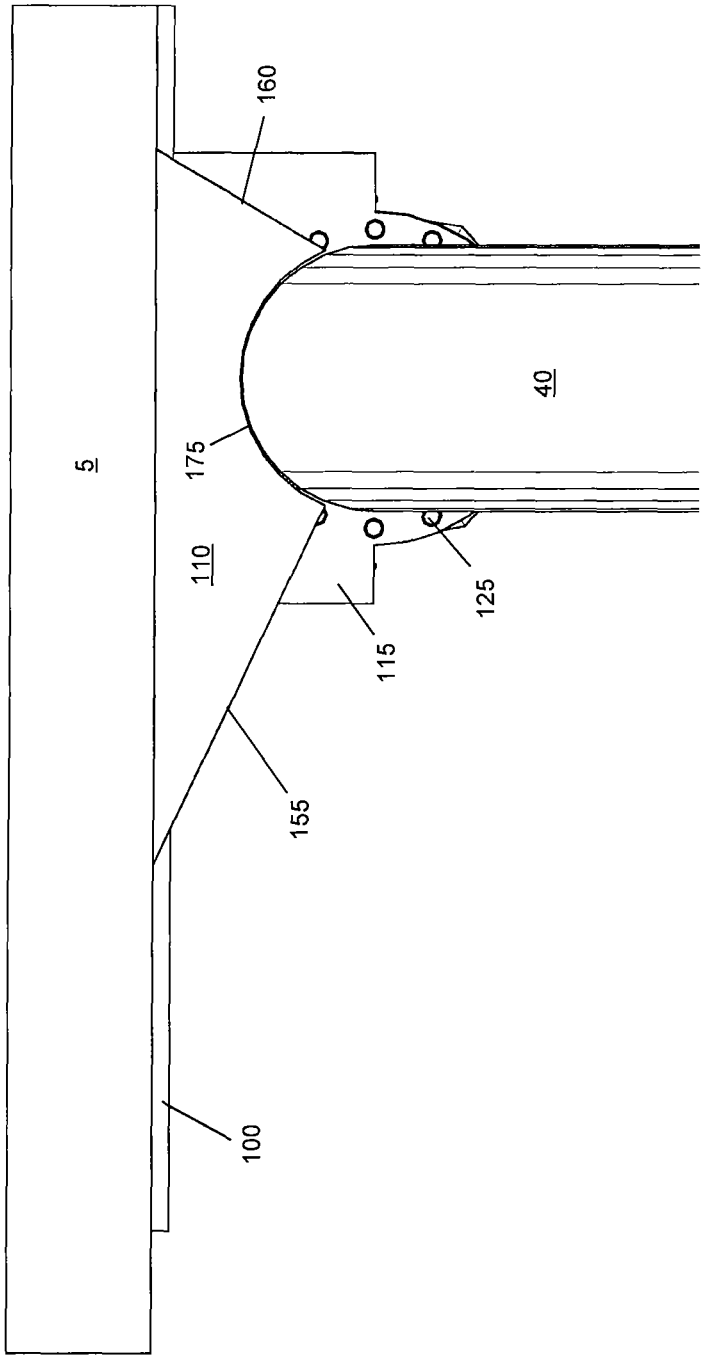


FIG. 18

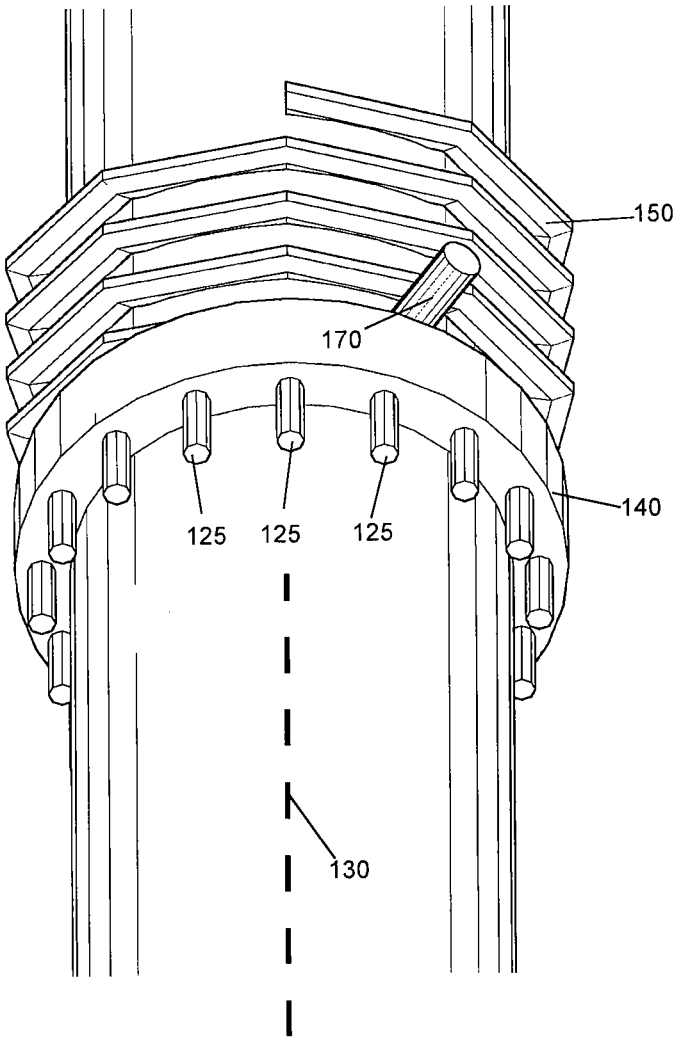


FIG. 19

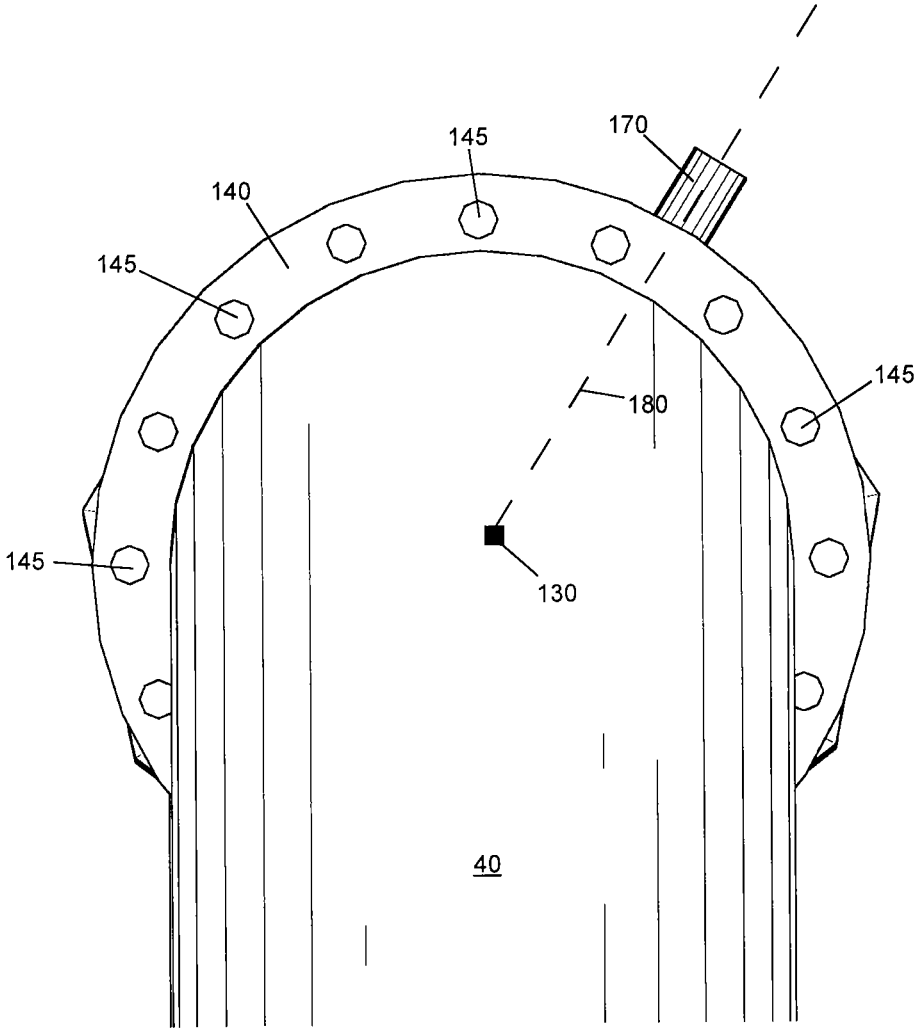


FIG. 20

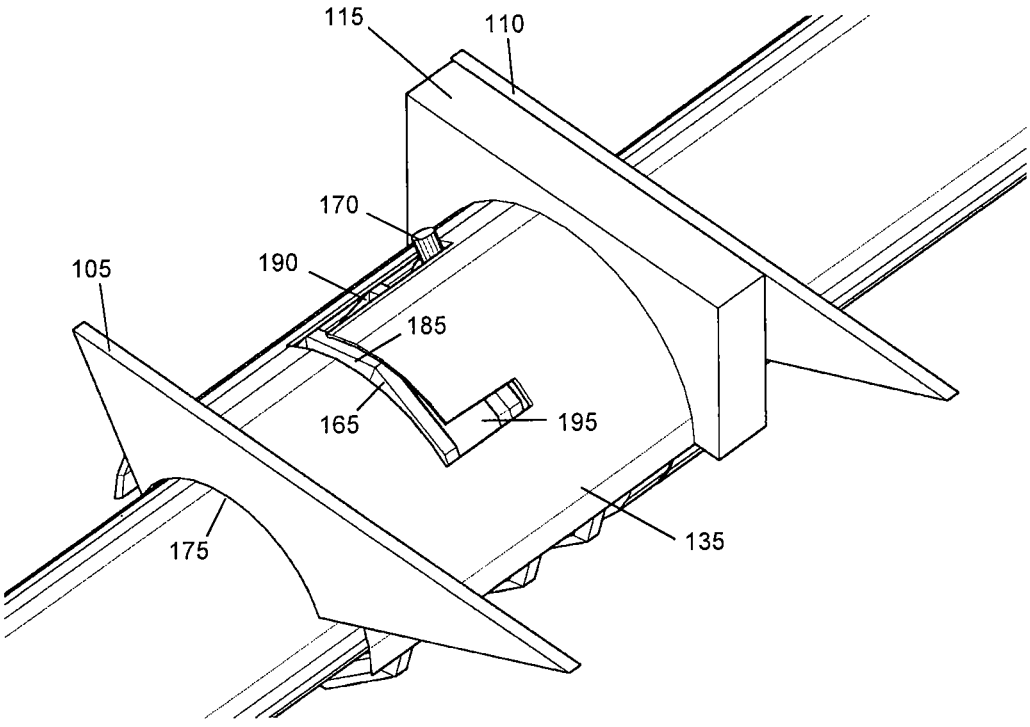


FIG. 21

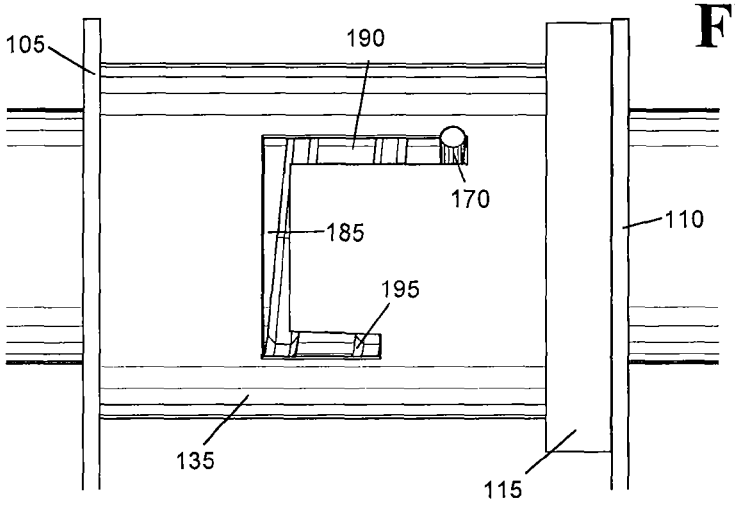


FIG. 22

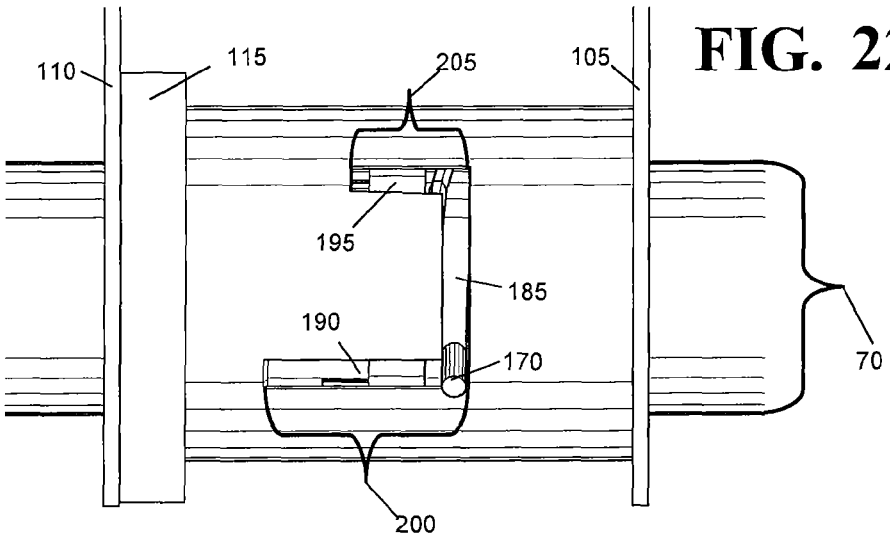


FIG. 23

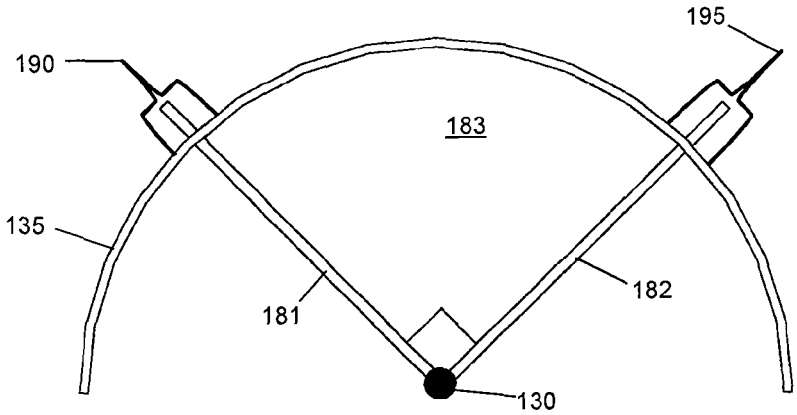


FIG. 24

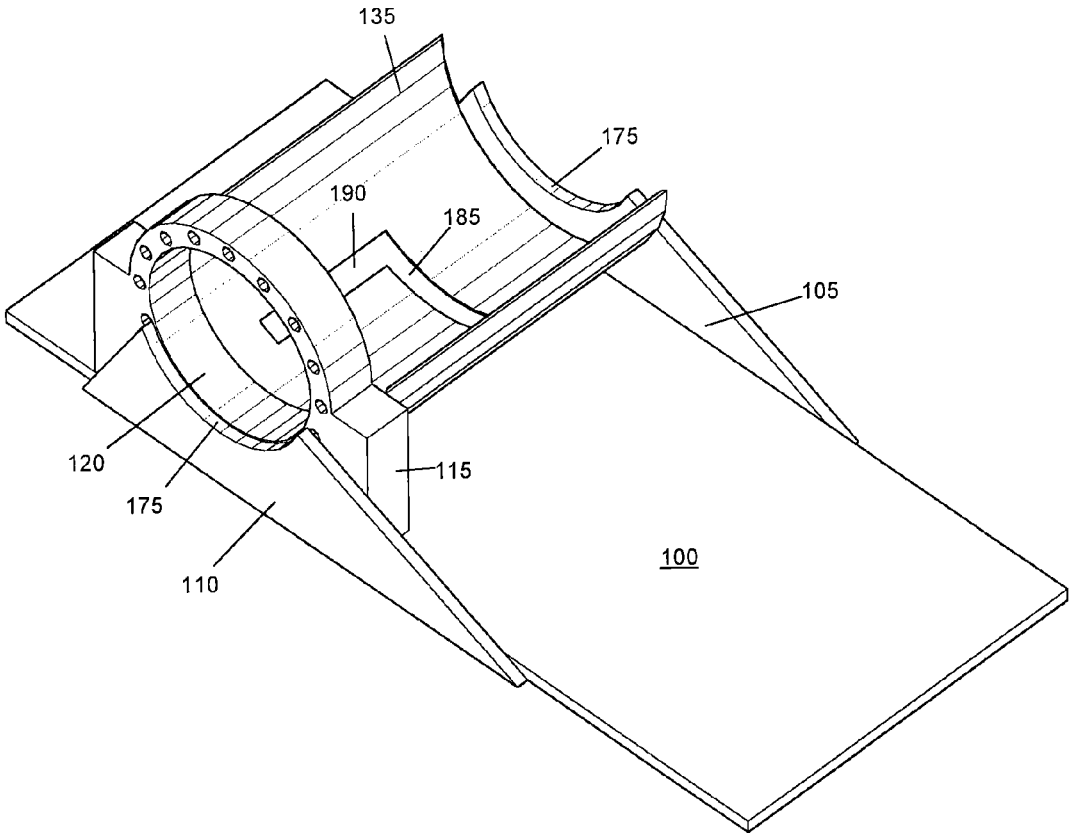
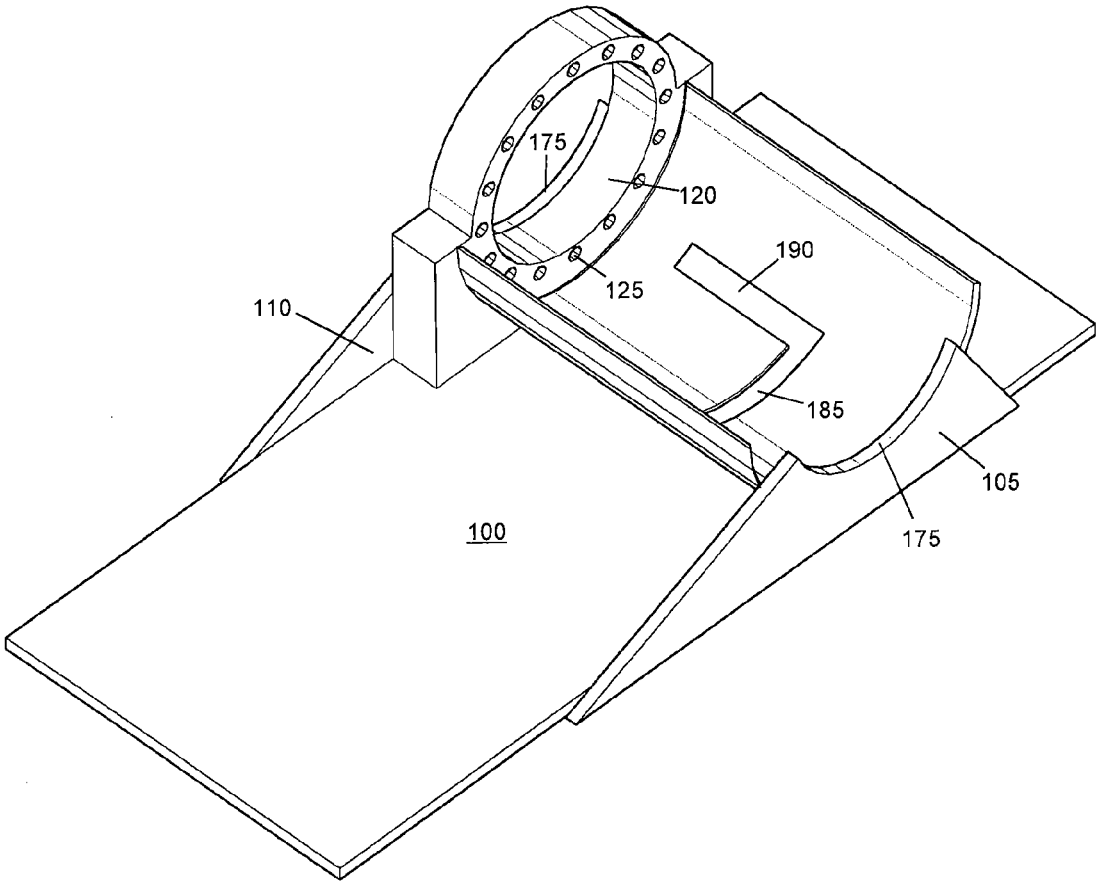


FIG. 25



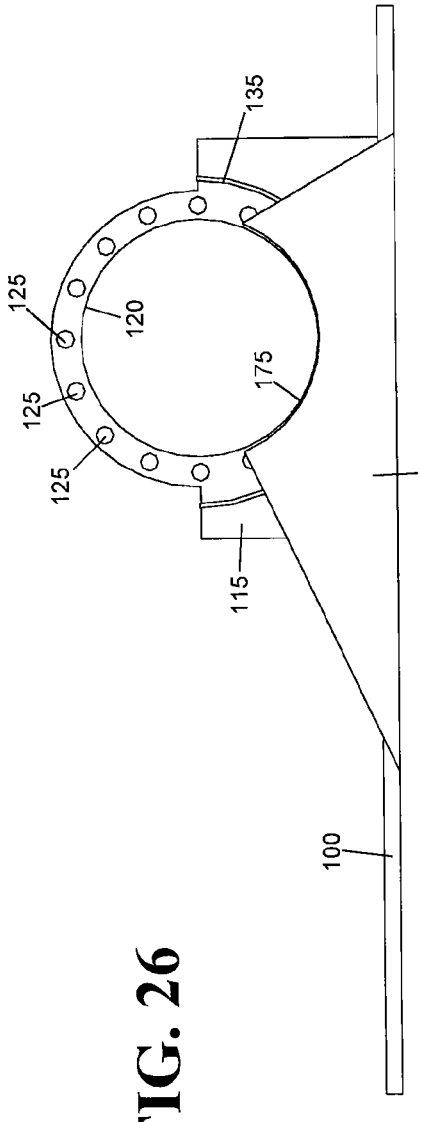

135
125
120
175
125
125
105
115
100

FIG. 26

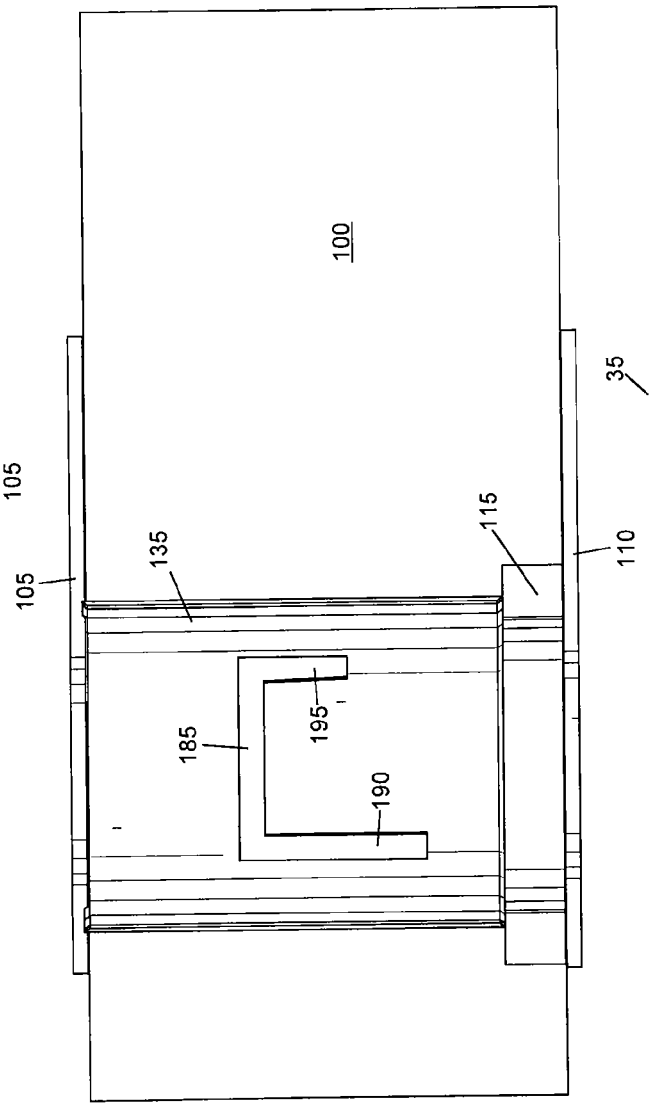

100
35
115
110
105
135
195
185
190

FIG. 27

FIG. 28

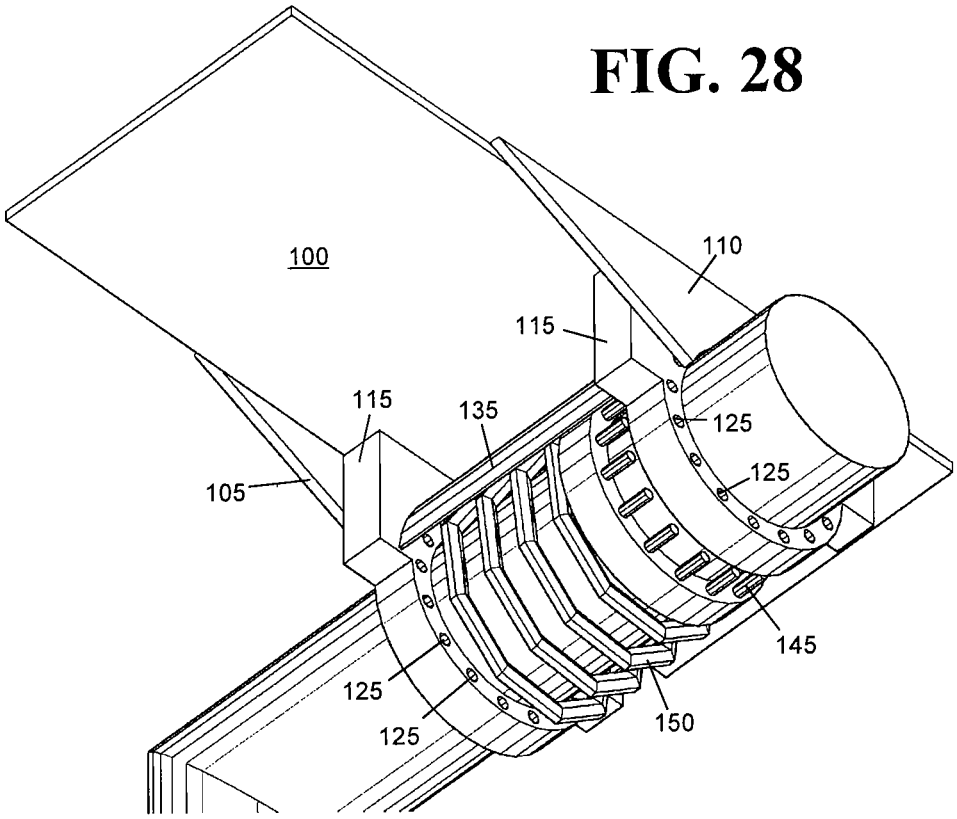


FIG. 29

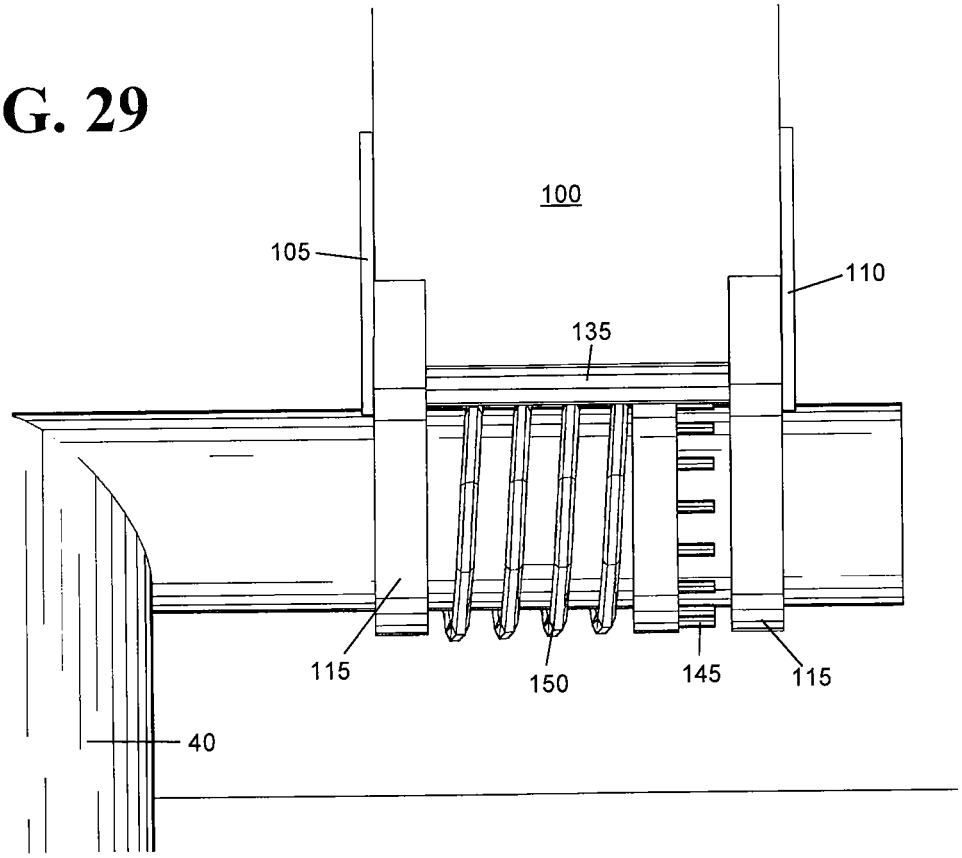
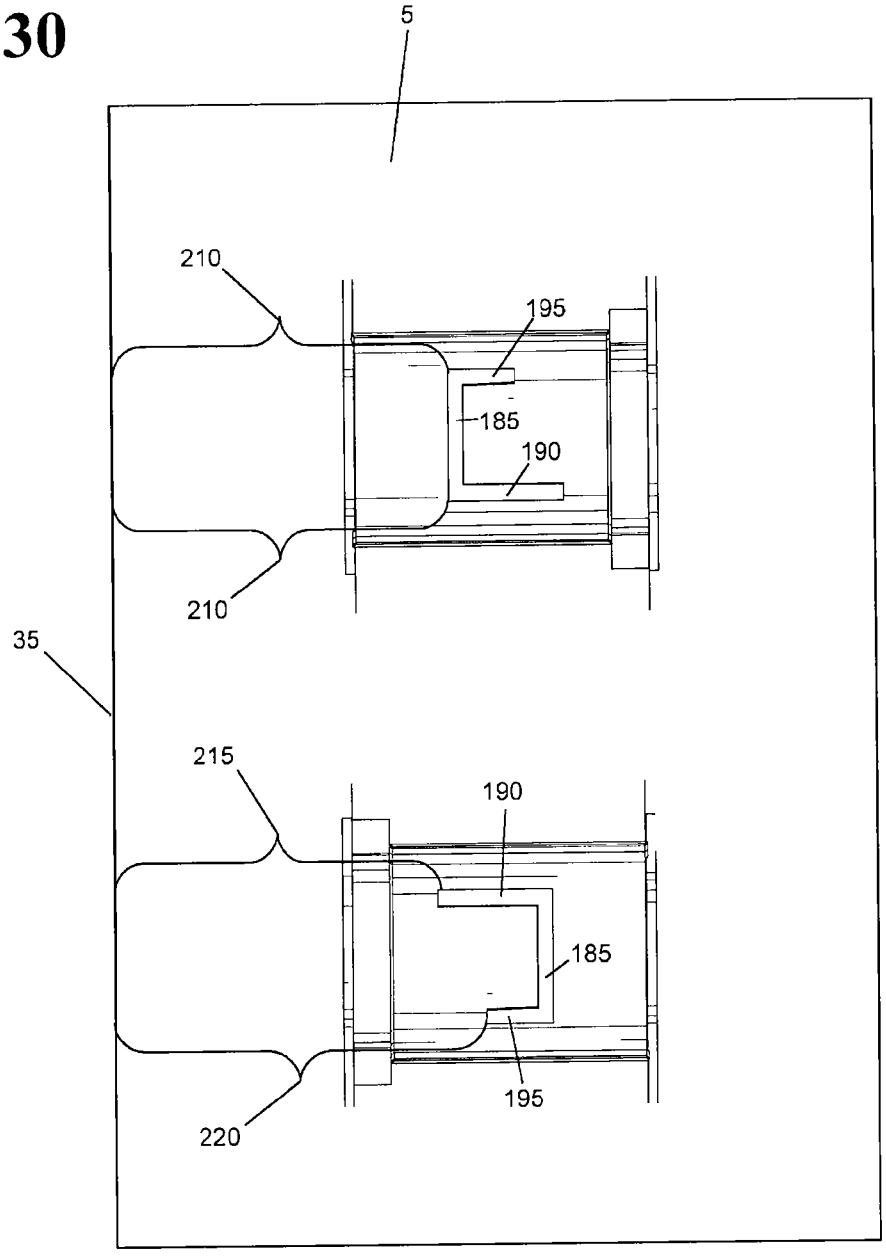


FIG. 30



OFFSET FOLDING LEG ASSEMBLY

FIELD OF THE INVENTION

The present invention relates generally to a folding leg mechanism, and more particularly to a folding leg mechanism that offsets the folded table legs when in a storage configuration while aligning the legs when in a use configuration.

BACKGROUND OF THE INVENTION

Folding tables are commonly used in commercial and residential settings where tables are intermittently needed, or the tables need to be moved on a regular basis. Tables in a storage configuration take up less space and are often stackable on other folded tables, thus reducing the amount of storage space needed. Latching mechanisms have been used to lock the table legs in either a storage or use configuration, however these mechanisms often do not provide sufficient rigidity and may cause the table to wobble. Additionally, latching mechanisms often involve numerous small interconnected pieces that may jam due to the buildup of dirt and debris, or be damaged when the tables are transported or stored.

SUMMARY OF THE INVENTION

The present invention provides an improved latching mechanism for tables with foldable legs. While maintaining the benefits of standard mechanisms, the mechanism of the present invention also achieves many benefits including an intuitively operable release mechanism and an offsetting mechanism that provides aligned table legs when the table is in a use configuration and offset table legs when in a storage configuration. By offsetting the table legs in storage configuration, the height of the table legs can be more than one half of the length of the table. This feature is of particular importance for folding tables that are utilized by standing persons.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a lower perspective view of a table with legs in a use configuration.

FIG. **2** is a bottom view of a table with legs in a use configuration.

FIG. **3** is a side view of a table with legs in a use configuration.

FIG. **4** is a bottom view of a table with legs that have been moved to an offset position, but not a storage position.

FIG. **5** is a side view of a table with legs that have been moved to an offset position, but not a storage position.

FIG. **6** is a bottom view of a table with legs that have been moved to an offset storage position, but have not been secured in the storage position.

FIG. **7** is a bottom perspective view of a table with legs that have been moved to an offset storage position, but have not been secured in the storage position.

FIG. **8** is a bottom perspective view of a table with legs that have been secured in an offset storage position.

FIG. **9** is a bottom view of a table with legs that have been secured in an offset storage position.

FIG. **10** is a perspective view of a folding mechanism with a leg between a use and storage configuration.

FIG. **11** is a side perspective view of a folding mechanism with a leg between a use and storage configuration.

FIG. **12** is a second perspective view of a folding mechanism with a leg between a use and storage configuration.

FIG. **13** is a bottom view of a folding mechanism with a leg between a use and storage configuration.

FIG. **14** is a bottom perspective view of a folding mechanism secured in a use configuration.

FIG. **15** is a bottom view of a folding mechanism secured in a use configuration.

FIG. **16** is a side view of a folding mechanism secured in a use configuration.

FIG. **17** is a second side view of a folding mechanism secured in a use configuration.

FIG. **18** is a perspective view of a table leg highlighting the protrusion between the spring and the ring of pins.

FIG. **19** is a side view of a table leg showing the protrusion and the ring of pins.

FIG. **20** is an upper perspective view of a rotation mechanism with the top portion of the rotation mechanism removed.

FIG. **21** shows a top view of a rotation mechanism with a table leg locked in a use configuration.

FIG. **22** shows a top view of a rotation mechanism with a table leg offset from the use configuration.

FIG. **23** shows an isolated side view of the cylindrical sheet.

FIG. **24** is a perspective view of a rotation mechanism isolated from a table leg.

FIG. **25** is a second perspective view of a rotation mechanism isolated from a table leg.

FIG. **26** is a side view of a rotation mechanism isolated from a table leg.

FIG. **27** is a bottom view of a rotation mechanism isolated from a table leg.

FIG. **28** is a bottom perspective view of a rotation mechanism adapted to secure a table leg with a single vertical portion.

FIG. **29** is a bottom view of a rotation mechanism adapted to secure a table leg with a single vertical portion.

FIG. **30** is schematic view of a table top with rotation mechanisms.

DETAILED DESCRIPTION

The present invention may be used with any type of leg and any type of top surface and is particularly suited for tables and applications requiring a lightweight, rigid, and robust mechanism with an intuitively operated release action. The improved folding mechanism may be used with objects having folding legs such as chairs and tables, stadium seating or benches. However, for descriptive purposes, the present invention will be described in use with a table.

FIGS. **1-3** show views of a table top **5** secured to table legs **10** via rotation mechanisms **15**. The first vertical portions **20** of the distinct table legs are aligned along a geometric plane **30** and are equidistant from a linear horizontal edge **35** of the table top when the table legs **10** are in a use configuration. While not required, the illustrated table system is symmetrical such that each table leg **10** has a second vertical portion **40** that is aligned along another geometric plane **45** and the second vertical portions **40** located near, and equidistant from a second edge **50** of the table top **5**. The first vertical portion **20** of the table leg **10** is separated from the second vertical portion **40** by a horizontal portion **55** that passes through the rotation mechanisms **15**.

In FIGS. **4** and **5**, the two table legs have been slid through the rotation mechanisms **15** such that the first vertical portion **20** of one leg is substantially further away (a first distance **60**) from the edge **35** than the first vertical portion **20** of the other leg (a second distance **65**). The first distance **60** is substantially greater than the second distance **65** in that the difference

between the two distances produces a significant chance in the position of the circular collar and protrusion along the axis of rotation of the table leg. The difference between the first distance **60** and the second distance **65** is greater than the width **70** of the first vertical portion **20** to facilitate the legs over lapping upon each other.

FIGS. **6** and **7** show the table legs of FIGS. **4** and **5** having been rotated such that the vertical portions (**20** and **40**) of the table legs **10** are located adjacent to the table top **5**. The table legs **10** in FIGS. **6** and **7** are not secured in a storage configuration and the two first vertical portions **20** of the table legs are separated from the linear horizontal edge **35** by the first distance **60** and the second distance **65**, respectively. Since the differences of the first distance **60** and the second distance **65** is greater than the width **70** of the first vertical portion **20**, there is a slight gap **75** between the two first vertical portions **20**.

FIGS. **8** and **9** show the tables of FIGS. **4-7** in a folded and secured position. The first vertical portions **20** of the two table legs **10** have moved closer to each other such that the gap shown in FIGS. **6** and **7** between the table legs has been removed or substantially reduced. The movement of the table legs towards each other causes features in the rotation mechanisms **15** to secure the table legs in the storage position. To disengage the table legs from the storage position or configuration, the legs are moved away from each other to disengage the locking features in the rotation mechanisms.

FIGS. **10** through **13** show an isolated view of the rotation mechanism **15** interacting with a table leg **10**. The rotation mechanism includes a base **100** or plate adapted to be secured to the table top. In the illustrated example, the base **100** has a substantially rectangular shape, however it should be appreciated that other shapes such as circular or polygonal may be utilized. The base **100** may include holes or openings through which fasteners (such as screws) pass through and interconnect with the table top. Flanking the base **100**, and extending away from the table top, are a first sidewall **105** and a second sidewall **110**. A locking ring **115** or locking wall also extends downward away from the table top and is rigidly secured to the base **100**. The locking ring **115** includes a circular aperture **120** through which the horizontal portion **55** of the table leg **10** slides. The circular aperture **120** is substantially defined by the circumference of the horizontal portion **55** of the table leg and allows the table leg **10** to both slide through the circular aperture **120** and rotate within the aperture. Surrounding the circular aperture **120** are a plurality of openings **125** that extend through the locking ring **115**. As with the circular aperture **120**, the openings **125** extend through the locking ring **115** parallel to the axis of rotation **130** of the table leg. As shown in the figures, the openings **125** are substantially smaller than the circular aperture **120**. While the openings **125** are shown as circular, it should be appreciated that the openings **125** may be a variety of shapes. Between the locking ring **115** (locking wall) and the first sidewall **105** is a cylindrical sheet **135** or cylindrical piece partially circumscribing the horizontal portion **55** of the table leg, and located between the horizontal portion **55** and the base **100** of the rotation mechanism **15**. The cylindrical sheet **135** is substantially concentric with the horizontal portion **55** such that there is a substantially constant separation between the cylindrical sheet **135** and the horizontal portion **55**. At the rotation mechanism **15**, the table leg **10** includes a circular collar **140** with a diameter greater than the circular aperture **120**. While the diameter of the circular collar **140** is greater than that of the circular aperture **120**, the circular collar **140** has a smaller radius of curvature than the cylindrical sheet **135**. From the circular collar **140**, a plurality of pins **145** extend, parallel to the axis of rotation **130**, towards the locking ring **115**. The pins **145** have shapes that are substantially defined by the shape of the openings **125**, and are slightly smaller than the openings such that they are able to be secured within the openings **125** when the table legs are in a use configuration. In one embodiment, the ends of the pins are slightly tapered to facilitate them entering into the openings and providing a fine adjustment to the rotational configuration of the table legs. The interconnection of the pins **145** in the openings **125** provides additional stability to the table legs when the table is in use. However, the pins **145** are not secured in the openings **125** of the locking ring **115** when the table legs are secured in a storage configuration. Located between the first sidewall **105** and the circular collar **140** is a spring **150** that acts to bias the circular collar **140** towards the locking ring **115**. While the illustrated example shows a refined compact rotation mechanism, it should be appreciated that the spring **150** may be located distant from the remainder of the rotation mechanism. Highlighted in FIG. **11**, the illustrated first sidewall **105** and the second sidewall **110** are asymmetric relative to the axis of rotation **130** of the table leg. Each of the sidewalls (**105**, **110**) has a long edge **155** extending from the horizontal portion **55** of the table leg to the base **100**, and a short edge **160** extending from the table leg to the base **100**. The asymmetrical shape of the sidewalls allows for the horizontal portion **55** of the table leg to be positioned closer to the edge of the table top. The overlapping nature of the table legs allows for substantially longer table legs to be utilized than would otherwise be feasible. By positioning the horizontal portions of the table legs closer to the edge of the table top, the stability of the table while in a use configuration is increased.

FIGS. **14** through **17** illustrate the rotation mechanism **15** where the circular collar **140** is pressed against the locking ring **115** such that the pins **145** are secured within the openings **125**. The spring **150** continues to press the circular collar **140** towards the locking ring **115** to prevent the table legs from accidentally disengaging from the use configuration. FIG. **16** is a side view of the rotation mechanism that shows the cylindrical sheet **135** with a track **165** that surrounds a protrusion **170** of the horizontal portion **55** of the table leg that is radially aligned to the axis of rotation of the table leg. FIG. **17** highlights the profile of the second sidewall **110** that has a concave surface **175** between the long edge **155** and the short edge **160**. The concave surface **175** is substantially defined by the circumference of the table leg, and may act to further secure the table leg to the table top **5**. The first sidewall **105** also includes a similar concave surface that is defined by the circumference of the horizontal portion of the table leg.

FIGS. **18** and **19** show a portion of the table leg and spring in isolation. The circular collar **140** fully circumscribes the horizontal portion of the table leg. The spring **150** is located near the circular collar **140** and the protrusion **170** is located between the spring **150** and the circular collar **140**. While the protrusion **170** is located between the collar and spring in FIG. **18**, it should be noted that the protrusion **170** extends directly from the circular collar **140** in FIG. **19**. The protrusion **170** is aligned along a radius **180** of the axis of rotation **130** such that the protrusion has a length that is defined by a line extending perpendicularly from the axis of rotation **130**.

FIGS. **20** through **23** highlight the track **165** in the cylindrical sheet **135** of the rotation mechanism. The base **100** of the rotation mechanism **15** has been removed to better illustrate the cylindrical sheet **135**. The track **165** of the cylindrical sheet **135** includes a cylindrical portion **185** that rotationally extends along a geometric arc with the axis of rotation **130** as the center point. From the cylindrical portion **185** of the track **165** a first linear portion **190** extends perpendicularly away

from the cylindrical portion **185** parallel to the axis of rotation **130** of the table leg. A second linear portion **195** also perpendicularly extends away from the cylindrical portion **185** distant from the first linear portion **190**. The first linear portion **190** extends a first distance **200** while the second linear portion only extends a second distance **205**. The difference between the first distance **200** and the second distance **205** is approximately one half of the width **70** of the table leg such that when the table legs are in a storage configuration they are kept in close proximity to each other. When the table legs are in the use configuration, the protrusion **170** is at the end of the first linear portion **190** of the track **165** that is closest to the locking ring **115** while when the table legs are in the storage configuration the protrusion **170** is located at the end of the second linear portion **195** that is closest to the locking ring **115**. The spring in the rotation mechanism acts to bias the protrusion **170** towards the locking ring **115** (locking wall). To change the legs from a use configuration to a storage configuration (or vice versa), the legs are moved against the spring until the protrusion **170** is able to enter the cylindrical portion **185** of the track **165**. Only once the protrusion has reached the cylindrical portion **185** of the track **165** are the table legs able to be rotated. The legs are then rotated until the protrusion reaches the opposite linear portion of the track at which point further rotation of the leg is not possible. Once at the opposite linear portion, the spring biases the protrusion **170** towards the locking ring **115** and the linear portion prevents rotation of the table leg. If the table legs are in the use configuration, the pins of the circular collar and the openings in the locking ring also act to prevent rotation of the table legs.

FIG. **23** shows a side view of the cylindrical sheet **135**. A first geometric radius **181** and a second geometric radius **182** perpendicularly extend from the axis of rotation **130** through the centers of the first linear portion **190** and the second linear portion **195**, respectively. The first and second geometric radiuses (**181**, **182**) are at a right angle to each other such that one quadrant **183** about the axis of rotation **130** is defined by the two radiuses. The cylindrical portion **185** of the track **165** fully spans the quadrant **183** defined by the two radiuses. By spanning a single quadrant, the cylindrical portion **185** of the track **165** allows the table legs to be rotated 90 degrees, and no more.

FIGS. **24** through **27** show an isolated view of the rotation mechanism **15** without the horizontal portion of the table leg or the spring. Without the table leg, the circular aperture **120** of the locking ring **115** is shown having a diameter that is substantially similar to the concave surface **175** of the second sidewall **110**. The first sidewall **105** also has a concave surface that is substantially similar to the circular aperture **120** of the locking ring **115**. The illustrated cylindrical sheet **135** is shown having a half circular shape, however it should be appreciated that in an alternate embodiment the cylindrical sheet fully encloses a portion of the horizontal portion of the table leg. In another embodiment, the cylindrical sheet is less than half a circle in circumference, and in yet another embodiment, the cylindrical sheet has a circumference that is only slightly larger than the cylindrical portion of the track. In FIGS. **24-27**, the base **100** is shown as being asymmetrical about the cylindrical sheet **135**, however in another embodiment the base **100** is symmetrical. Additionally, the base **100** may be composed of several components that act to secure the rotation mechanism to the table top.

FIGS. **28** and **29** show an alternate embodiment of a rotation mechanism adapted to secure a table leg with a single vertical portion. The rotation mechanism shown in FIGS. **28** and **29** has all the components of the rotation mechanism shown in FIGS. **1** through **27** with the addition of a second locking ring **115** located adjacent to the first sidewall **105**. The second locking ring acts primarily as a guide surface for the horizontal portion of the table leg and prevents wobble of the leg. To reduce wobble, the first and second locking rings are preferably spaced as far from each other as possible. As shown in FIG. **28**, the first and second locking rings **115** include openings **125**. The openings **125** of the second locking ring do not interact with the pins **145** of the table leg and may be omitted. However, to reduce the variety of pieces that need to be manufactured, it is expected that at in at least some embodiments all of the locking rings will be created with openings **145**. In the illustrated example, the locking rings **115** are identical to each other and provide the rotation mechanism with a refined appearance; however, it should be appreciated that in other embodiments the two locking rings may have substantially different shapes from each other.

FIG. **30** shows a schematic view of two rotation mechanism secured to a table top **5**. The table top has a first linear horizontal edge **35**, and the rotation mechanisms each have cylindrical sheets **135** with tracks having cylindrical portions **185**, first linear portions **190**, and second linear portions **195**. In mechanism show in the upper portion of the figure, the first linear portion **190** and the second linear portion **195** are both a first length **210** from the linear horizontal edge **35**. They are equidistant from the edge. In comparison, the first linear portion **190** of the lower rotation mechanism is a second length **215** from the linear horizontal edge **35** while the second linear portion **195** is a third length **220** from the edge. The third length is substantially greater than the second length. In the upper rotation mechanism, a spring would bias the protrusion away from the linear horizontal edge **35**, while the lower mechanism would have a spring biasing another protrusion on the table leg towards the linear horizontal edge **35**.

The inventors contemplate several alterations and improvements to the disclosed invention. Other alterations, variations, and combinations are possible that fall within the scope of the present invention. Although various embodiments of the present invention have been described, those skilled in the art will recognize more modifications that may be made that would nonetheless fall within the scope of the present invention. Therefore, the present invention should not be limited to the apparatus described.

I claim:

1. A table system comprising:

a table top connecting to a table leg though a rotation mechanism,

the table leg rotatable about an axis of rotation having

a horizontal portion adjacent to the table,

a protrusion secured to the horizontal portion and radially extending away from the axis of rotation, and

a first leg portion perpendicularly extending away from the horizontal portion;

the rotation mechanism

with a first linear edge, a second linear edge, and a curved edge between the first linear edge and the second linear edge,

the rotation mechanism rigidly secured to the table top, and

the rotation mechanism including a track surrounding the protrusion, the track having

a cylindrical portion partially circumscribing the horizontal portion of the table leg and bounded by the curved edge,

a first linear portion perpendicularly extending from the cylindrical portion and bounded by the first linear edge, and

a second linear portion

perpendicularly extending from the cylindrical portion

bounded by the second linear edge, and

located distant from the first linear portion.

2. The table system of claim **1** wherein

the table leg is rotatable from

a storage position wherein the first leg portion is adjacent to the table top to

a use position wherein the first leg portion extends away from the table top;

wherein the protrusion is

located within the first linear portion of the track in the storage position,

located within the second linear portion of the track in the use position.

3. The table system of claim **2** wherein

the table top includes a side edge;

the rotation mechanism further includes

a third edge

located a first distance from the side edge of the table top,

extending away from first edge, and

bounding the first linear portion of the track of the rotation mechanism,

a fourth edge

located a second distance from the side edge of the table top,

extending away from second edge, and

bounding the second linear portion of the track of the rotation mechanism,

the protrusion is located adjacent to the third edge in the storage position,

the protrusion is located adjacent to the fourth edge in the use position, and

the first distance is substantially different from the second distance.

4. The table system of claim **3** wherein

the first leg portion has a first width, and

the difference of the first distance and the second distance is half the first width.

5. The table system of claim **2** wherein

the table leg includes a plurality of pins

rigidly secured to and circumscribing the horizontal portion, and

directly contacting the rotation mechanism when the table leg is in both the use position and the storage position.

6. The table system of claim **5** further comprising

a spring connecting to both the table leg and the rotation mechanism to bias the plurality of pins into a plurality of holes in the rotation mechanism.

7. The table system of claim **1** wherein

the table leg includes a second leg portion

perpendicularly extending away from the horizontal portion,

parallel to the first leg portion, and

distant from the first leg portion.

8. The table system of claim **1** wherein

the cylindrical portion of the track circumscribes geometric quadrant about the axis of rotation.

9. The table system of claim **1** wherein

the rotation mechanism includes

a plate directly contacting the table top,

a cylindrical piece mounted on the plate and including the track, and

a first wall rigidly secured to the plate and extending away from the table top, the horizontal portion of the table leg passing through an aperture in the first wall.

10. The table system of claim **9** wherein

the first linear portion and the second linear portion are both located directly between the cylindrical portion and the first wall, and

a spring connecting to the table leg and rotation mechanism to force the protrusion towards the first wall.

11. The table system of claim **10** wherein

the rotation mechanism includes

a second wall rigidly secured to the plate and extending away from the table top parallel to the first wall,

a third wall adjacent to the first wall,

the cylindrical piece is flanked by the third wall and the second wall, and

the spring is located between the first wall and the second wall.

12. A table system comprising

a table top with a linear horizontal edge;

a first table leg and a second table leg,

each table being

rotationally secured to the table top through a rotation mechanism,

rotatable about an axis of rotation between a storage configuration and a use configuration,

located adjacent to the table to in the storage configuration, and

extending away from the table top in the use configuration;

in the storage configuration

both the first table leg and the second table leg both located near the linear horizontal edge,

the first table leg located a first distance from the linear horizontal edge,

the second table leg located a second distance from the linear horizontal edge,

wherein the second distance is greater than the first distance;

in the use configuration

the first table leg and the second table leg are equidistant from the linear horizontal edge;

wherein

each table leg includes

a protrusion radially extending away from the axis of rotation of the table leg,

the rotation mechanism of each table leg includes

an arcuate edge between a first linear edge and a second linear edge,

a track for guiding the protrusion of the table leg, the track having

a cylindrical portion with a first end and a second end, the cylindrical portion extending perpendicular to the axis of rotation of the table leg,

the cylindrical portion bounded by the arcuate edge,

a first linear portion bounded by the first linear edge extending from the first end perpendicular to the cylindrical portion and parallel to the axis of rotation,

a second linear portion bounded by the second linear edge and located distant from the first linear portion and
extending
from the second end
perpendicular to the cylindrical portion and parallel to the axis of rotation;

wherein
the first linear portion
of the rotation mechanism
of the first table leg, and
the second linear portion
of the rotation mechanism
of the first table leg
are equidistant from the first linear horizontal edge, and

wherein
the first linear portion
of the rotation mechanism
of the second table leg
is a third distance from the first linear horizontal edge,
the second linear portion
of the rotation mechanism
of the second table leg
is a fourth distance from the first linear horizontal edge, and
the fourth distance is substantially greater than the third distance.

13. The table system of claim **12** further comprising

a first spring connecting to both the first table leg and the rotation mechanism of the first table leg to bias the protrusion of the first table leg away from the linear horizontal edge, and

a second spring connecting to both the second table leg and the rotation mechanism of the second table leg to bias the protrusion of the second table leg towards the linear horizontal edge.

14. The table system of claim **12** wherein

the first linear portions of the rotation mechanisms of both the first and second table legs have a first length;

the second linear portions of the rotation mechanisms of both the first and second table legs have a second length; and

the difference of the first length and the second length is half the width of the first table leg.

15. A table system comprising

a table top with a linear horizontal edge;

a first table leg and a second table leg,

each table being
rotationally secured to the table top through a rotation mechanism,
rotatable about an axis of rotation between a storage configuration and a use configuration,
located adjacent to the table to in the storage configuration and
extending away from the table top in the use configuration;

in the storage configuration
both the first table leg and the second table leg both located near the linear horizontal edge,
the first table leg located a first distance from the linear horizontal edge,
the second table leg located a second distance from the linear horizontal edge,
wherein the second distance is greater than the first distance;

in the use configuration
the first table leg and the second table leg are equidistant from the linear horizontal edge;

each table leg includes
a projection radially extending away from the axis of rotation, and
a rotation linkage distant from the rotation mechanism of the table leg,
the rotation linkage includes
a cylindrical edge between a first edge and a second edge, and
a track for guiding the projection of the table leg, the track having
a cylindrical portion with a first end and a second end, the cylindrical portion bounded by the cylindrical edge of the rotation linkage and extending perpendicular to the axis of rotation of the table leg,
a first linear portion bounded by the first edge of the rotation linkage and
extending
from the first end
perpendicular to the cylindrical portion and parallel to the axis of rotation,
a second linear portion
bounded by the second edge of the rotation linkage,
located distant from the first linear portion, and
extending
from the second end
perpendicular to the cylindrical portion and parallel to the axis of rotation.

16. The table system of claim **15** wherein

the rotation mechanism of the first table leg includes
a ring of holes circumscribing and extending parallel to the axis of the first table leg,

the first table leg includes a ring of pegs circumscribing and extending parallel to the axis of rotation of the first table leg, and

wherein the use configuration the ring of pegs are located within the ring of holes.

17. The table system of claim **15** wherein

the table top has a table length;

each table leg includes

a horizontal portion aligned with the axis of rotation of the table leg and passing through the rotation mechanism of the table leg

a first leg portion distant from a second leg portion, each leg portion extending perpendicularly from the horizontal portion and having a length greater than one half of the table length.

* * * * *